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THE ECONOMIC ANNALIST

FEBRUARY 1958 — Dec. 1959 Vol. XXVIII, ~~No. 1~~ XXIX

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THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS
MARKETING SERVICE, ECONOMICS DIVISION,
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Hon. Douglas S. Harkness, Minister of Agriculture

INDEX, Volume XXVIII, 1958

PAGE

Apple Enterprise in Nova Scotia, Some Aspects of the. . *V. A. Heighton* 67
Cattle Production in Alberta and Saskatchewan, Recent Changes in. . . . *S. R. Burkell* 19
Consumer Acceptance of Grade A lean Bacon in Montreal, Edmonton and Toronto. . . . *Charlotte I. Johnston* 39
Consumer Choices among Beef Roasts and Steaks based on visual inspection. . . . *L. E. Drayton* 78
Cropland Acreages in Manitoba, 1921-1956, Changes in., *S. W. Garland* 29
Economic Situation—February 3
 —April 27
 —June 51
 —August 75
 —October 99
 —December 123
Farm Business in the Rocky Mountain Trench of British Columbia, The
 —Part I . . . . *D. C. Crossfield* 106
 —Part II 126
Farm Indebtedness and Use of Credit in Manitoba, 1957 . . *T. O. Riecken* 63
Farm Organization and Business in the Lundar-Eriksdale Area of Manitoba. . . . *J. G. MacKenzie* 53
Farm Organization in the Red River Valley, Manitoba, 1957 . . . . *T. O. Riecken* 133
Flexible Loan Repayment Plan for Okanagan Fruit Farmers . . . . *R. C. Gilstorf* 101
Flexible Loan Repayment Plan for Prairie Grain Farms . . *R. C. Gilstorf* 13
Marketing of Livestock from Farms in the Saskatoon Area, The . . . . *M. Ragush* 35
Ninth Session of the Food and Agriculture Organization Conference. A Report on the 5
Organization Aspects of Prairie Grain Farms on Sceptre Heavy Clay Soil, the Brown Soil Zone, Saskatchewan, 1955, Some . . . . *J. Zeman* 58
Price Spreads and Farmers' Share of the Consumer's Retail Food Dollar . . . . *Z. Y. Yankowsky* 93
Production Functions in the study of Resource Productivity in some Beef producing areas of Alberta, The use of . . . . *W. Darcovich* 85
Productivity of Capital in Wheat Production on the Grain Farms in Saskatchewan . . . . *J. K. Wiens* 116
Research in Consumption Economics 1953-1958 . . . . *L. E. Drayton* 138

The Queen's Printer and Controller of Stationery, Ottawa, 1959
55238-0—1

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MARKETING SERVICE, ECONOMICS DIVISION

J. F. BOOTH, Chief

FEBRUARY 1958 Vol. XXVIII No. 1

CONTENTS

Page

The Economic Situation.................................. 3

A Report on the Ninth Session of the Food and Agriculture Organization Conference.................. 5

Flexible Loan Repayment Plan for Prairie Grain Farms.................................*R. C. Gilstorf* 13

Recent Changes in Cattle Production in Alberta and Saskatchewan.......................*S. R. Burkell* 19

Publications... 23

EDITORIAL COMMITTEE:

G. P. Boucher, L. E. Drayton and Frank Shefrin

Published by Authority of the Honourable Douglas S. Harkness
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
				1935-39=100				1949=100		1935-39=100
1913..........	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914..........	85.4	....	....	....	....	85.3	90.2	49.6	46 0	....
1915..........	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916..........	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917..........	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918..........	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919..........	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920..........	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921..........	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922..........	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923..........	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924..........	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925..........	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926..........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927..........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928..........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929..........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930..........	121.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931..........	94.0	87.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932..........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933..........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934..........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935..........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	85.6
1936..........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	94.6
1937.........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	83.0	51.4	108.0
1938..........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	102.0
1939..........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	109.7
1940..........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	131.4
1941..........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	164.8
1942..........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	195.7
1943..........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65 2	208.5
1944..........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	212.4
1945..........	132.1	166.2	162.5	170.2	185.7	152.1	125.9	75.0	66.3	187.2
1946..........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	171.9
1947..........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	187.8
1948..........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	196.3
1949..........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	199.6
1950..........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	211.5
1951..........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	226.5
1952..........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116 5	116.8	233.0
1953..........	220.7	221.6	179.4	263 8	250 4	234.8	207.4	115.5	112.5	248.4
1954..........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	244.6
1955..........	218.9	209.7	174.4	245.1	232.7	238.3	204.6	116.4	112.1	265.8
1956..........	225.6	210.2	173.5	246.9	231.0	247.6	208.8	118.1	113.4	284.4
1957..........										
1957										
Jan..........	229.4	211.6	166.0	257.2	227.7	247.0	212.3	120.3	117.1	291.1
Feb..........	228.4	210.1	161.3	259.0	228.1	....	....	120.5	117.2	292.0
Mar..........	228.4	206.8	160.2	253.4	225.0	....	....	120.5	116.4	290.9
April........	228.4	207.5	159.9	255.1	224.6	258.6	212.0	120.9	116.7	287.8
May..........	228.0	206.4	157.5	255.3	224.7	....	....	121.1	116.7	286.9
June..........	228.0	208.4	154.6	262.2	226.5	....	....	121.6	117.7	284.1
July..........	228.2	212.7	155.1	270.2	229.8	....	....	121.9	118.2	285.2
August.......	227.6	212.6	153.8	271.3	230.3	257.6	209.7	122.6	120.2	283.3
Sept..........	226 7	208.5	153·2	263.8	228.3	....	....	123.3	121.9	281.8
Oct..........	224.8	200.7	152.8	248.6	222.5	....	....	123.4	121.7	278.4
Nov..........	224.0	199.7	153.7	245.7		....	....	123.3	120.2	
Dec..........		204.7	155.1	254.4		....	....	123.1	118.8	

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1955—July 1956 include final barley and oats payments announced November 15 and 29, 1956.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

In his *Review of Canada's Economy,* issued on December 26, 1957, the minister of Trade and Commerce said that

> In the year now ending, Canadians have been witnessing the culmination of a surge of expansion centered in material-producing industries and extending to all segments of the economy. The current phase of this expansion began in 1955, in response to worldwide pressure for more materials to provide for the rising levels of industrial production throughout the world. Substantial additions to capacity are now in operation or are nearing completion in all major resource industries. In some instances this new capacity will provide primarily for domestic needs. A major portion, however, is directed toward export markets. This industrial build-up has been the dominant stimulus underlying the high level of economic activity during the last few years.

Looking at prospects for 1958, the minister went on to say that

> At year-end the economic situation in Canada is one of high activity but increasing slack in a number of industries. Total employment has moved upward and production has been sustained throughout most of 1957, but both are seemingly edging downward at the end of the year. The trend of overall sales has not been commensurate with the substantial rise in productive capacities. For the months immediately ahead, there is little indication of any basic change in this situation. On the one hand there are strong underlying supports in the economy. At the same time there is little evidence of forces which would quickly generate new strength in the traditionally dynamic areas of exports and investment.
>
> ....
>
> What is presently known of capital expenditures plans suggests a moderately lower volume of business investment in the coming year. The principal declines will occur in material-processing industries and some forms of transporation, while increases are in prospect for some service and utility groups. In addition, there are indications of a rise in residential and institutional building and also of more work to be done by way of local improvements. On the basis of these preliminary indications, the overall volume of construction in 1958 should be as large as in the previous year. On the other hand, outlays for machinery and equipment should be lower. This has already been reflected in reduced orders and lower activity in a number of equipment industries. However, because of the large import content in Canada's equipment requirements, the full impact of reduced investment of this type does not fall on domestic industries.
>
> In the market situation ahead, consumer demand will be an important sustaining influence. Consumer income, traditionally less vulnerable than most other indicators to contractionary influences, has been given additional support by way of higher social security payments and lower taxes.
>
> ....
>
> The present pause in expansion comes about as a result of the fact that Canada is approaching a phase of development in which, for the time being, less resources are required for the build-up of basic industries. There would appear to be no dearth of uses to which these resources can be diverted. A tremendous volume of new capital facilities is needed to supplement and round out the basic expansion which has taken place. In fact the greater availability of investment resources provides an opportunity to get ahead with public improvements which have been lagging in recent years. Apart from these institutional requirements, the potential needs of consumers are virtually inexhaustible.

Gross National Product.—Canada's total output of goods and services, seasonally adjusted, was at an annual rate of $31 billion in the third quarter of 1957, or about one per cent over the rate for the preceding two quarters. About half the increase between the second and third quarters was attributable to a further advance in final product prices. In volume terms, the gross national product was practically unchanged.

The major factors contributing to the slight advance in the third quarter were the resumption of the upward trend in consumer expenditures, which had eased off in the second quarter; increased outlays for housing, which had been declining since early in 1956; and a rise in exports of goods and services, following the decline in the second quarter of 1957 and reflecting larger shipments of iron ore and higher sales of animal products. However, imports of goods and services dropped a little, contributing to some reduction in the current account deficit. Further gains in labor income were recorded, reflecting mainly the higher wage rates in some industrial groups.

Farm Cash Income.—Farm cash income from the sale of farm products totaled $638 million in the third quarter of 1957, compared with $698 million in the third quarter of 1956. The larger part of this decline may be attributed to smaller grain marketings in the Prairie provinces, particularly in Saskatchewan. A higher income from the sale of livestock and livestock products was not sufficient to offset the smaller returns from grains.

Preliminary estimates place cash farm income, for the first nine months of the year, at $1,847 million in 1957 compared with $1,911 million in 1956. The decline can be attributed mainly to the reduced returns from cereal grains. Smaller incomes in the second and third quarters of 1957 more than offset the higher returns in the first quarter.

Farm cash income from the sale of field crops in July-September 1957 was estimated at $184 million, a decline of about 31 per cent from the $267 million realized in the third quarter of 1956. Prices were somewhat lower but the major part of the income decline is attributable to smaller marketings of cereal grains. Wheat accounted for more than half the reduction in income. Lower incomes from cereal grains were recorded in each of the Prairie provinces but the greatest decline occurred in Saskatchewan. Income from sugar beets was substantially higher but returns from the sale of flaxseed were about the same as in the third quarter of 1956.

Farm cash income from field crops, for the January-September period of 1957 is estimated at $618 million or $87 million less than the $705 million realized in the corresponding period of 1956. The decline can be attributed mainly to the lower returns from cereal grains. Increased returns from flaxseed, tobacco, sugar beets and participation payments on previous years' western grain crops partly offset the lower returns from grains.

Income from the sale of livestock and livestock products in the third quarter of 1957 was estimated at $412 million, compared with $390 million in the corresponding quarter of 1956. Poultry meat was the only major commodity in this group to return less income to farmers than in the third quarter of 1956; this decline may be attributed to lower prices which more than offset the effects of higher marketings. Returns from hogs accounted for the major part of the increase in farm income from livestock and livestock products; higher prices more than offset lower marketings. Higher prices and larger marketings both led to increased returns from dairy products. Larger cattle marketings more than offset lower average prices.

For the first nine months of the year, farm income from livestock and livestock products was estimated at $1,096 million in 1957 and $1,073 million in 1956. Increases were noted for all commodities except eggs and poultry. Hogs accounted for most of the increase, and were followed by dairy products and cattle.

A REPORT ON THE NINTH SESSION OF THE FOOD AND AGRICULTURE ORGANIZATION CONFERENCE*

Representatives of seventy-four nations met in Rome in November 1957 to review the world situation and outlook for food and agriculture, the current and prospective activities of their Organization, the FAO, and its administrative and financial matters. When this Ninth Session of the Conference ended, three new countries were admitted to membership, Ghana, the Federation of Malaya and Poland; a new and substantially higher budget totaling $17 million was approved for the two-year period 1958-1959; a number of new activities were agreed to; further action was proposed on matters pertaining to support policies and surplus disposal problems; and a new Council was elected.

The Canadian delegation to the Ninth Session was headed by the Minister of Agriculture, the Honourable Douglas S. Harkness. The alternate delegate was Dr. J. F. Booth, Chief, Economics Division, Department of Agriculture and Chairman of the Canadian Interdepartmental FAO Committee. The Departments of Agriculture, Fisheries, Northern Affairs and National Resources (Forestry), National Health and Welfare (Nutrition), Trade and Commerce, Finance, and External Affairs were represented on the Delegation.

During the first week of the Conference, heads of delegations addressed the plenary session outlining progress and problems in their countries, commenting on the work of the FAO and reviewing the problems arising out of the paradoxical situation of surpluses and shortages. The Head of the Canadian Delegation, the Honourable Mr. Harkness, in his address to the plenary session said:

> "The Canadian Delegation notes with satisfaction the growth of FAO. Each session of the Conference has seen an increase in membership. We are now 74, and before this Conference is over, there will be new members. It is interesting to note that in the early years of FAO's existence, the countries joining were mainly concerned with the problems of rehabilitation, how to heal the wounds caused by war. The new members are countries that have recently attained self-government. Their problems are different from those that confronted FAO in the late forties, but we are confident that FAO can meet these new challenges.
>
> "We are starting this Conference with a new Director General and this also marks another milestone in the life of our Organization—for he is the first to be chosen from a great Asian country. We were very happy that he was able to visit us in Canada last January".

He referred to Canada's concern in respect to surpluses and their disposal:

> "We have watched with concern the mounting stocks of wheat which have been accumulating in exporting countries particularly in North America and the measures employed in surplus disposal. We know that economic development in many of the underdeveloped countries has been assisted through this programme. We certainly do not oppose such generous action in this area. But what has concerned us most is the volume and intensity of these programmes, some of the devices used in the past and the need for greater selectivity in order to ensure that such programmes do not interfere with commercial marketing.
>
> "We believe it to be in the interest of the importing and exporting nations that surplus disposal programmes should aim to function with the least possible disruption of commercial markets. On our part we have adhered to the FAO principles of surplus disposal and have participated in policy discussions and in marketing practices with this thought uppermost in our mind. At the same time, we are prepared to work hand in hand with

---

* Prepared by Frank Shefrin, a member of the Canadian Delegation.

> member nations of FAO in a sincere endeavour to find means by which the expanding food producing capacity may be used more effectively to meet the need for food which exists in the world".

In his conclusion the Canadian Delegate reiterated that:

> "There is no room for complacency, not only is there still much to be done, but with progress come new problems or an aggravation of old problems. While everybody admits that agriculture is vital to the life and well being of all, farmers have not in the past few years shared fully in the economic progress made in many countries.
>
> "If we review the many reports issued by our Organization during the last few years we find that governments and farmers, in their efforts to solve their many problems, have turned to measures which in the short run may prove helpful but are likely over the long run to create new difficulties. In many instances these solutions often merely result in moving these problems from one country to another, from one group of primary producers to another. This "beggar thy neighbour" policy is one which we do not favour and I am sure it is not acceptable to members of this Organization.
>
> "The Canadian Delegation feels that through FAO all countries can work together in finding solutions to the host of farm, forestry and fisheries problems, to the benefit of everyone concerned. I know that during this Conference we will be discussing price and income support measures, surplus disposal programmes, marketing problems, and many other issues. It is the sincere hope and wish of the Canadian Delegation that in the forthcoming discussions our attention will be centered on exploring solutions to these many problems—solutions that will be of mutual benefit to all countries and their producers".

The State of Food and Agriculture[1].—The Conference was informed that since 1955 world agricultural production had continued to expand at a rate of about three per cent annually, or rather over one per cent faster than the growth of world population. Moreover, in contrast to the earlier postwar period, production had in the last few years tended to increase faster in the less-developed regions than in those regions where supplies were already more ample, though this was to some extent offset by the more rapid growth of population in the less developed regions.

It was emphasized that despite the continuing surpluses of some commodities in certain exporting countries, there should be no slackening in the efforts in underdeveloped countries to increase food production of types to which their soils and climate were economically suited. In the Far East and Latin America in particular, the setback to over-all production during the war years had still not been made good on a per caput basis, in spite of the expansion of recent years. This fact, coupled with the rapid growth of demand which came with the increasing tempo of economic development, had contributed to the inflationary pressures and difficulties of foreign payments which some countries in those regions were experiencing. General indications were that world agricultural production as a whole would again be higher in the 1957-58 season.

With abundant supplies, average prices of agricultural products in world trade had continued their slow decline, and no reversal of this movement was yet apparent. In comparison with the increase of eight per cent in volume in 1956, the rise in the total value of world agricultural trade had therefore been only about four per cent, while in some regions the total value of agricultural exports had declined. Even the small rise for the world as a whole had been offset in terms of purchasing power by the continuing upward movement in the prices of manufactured goods.

---

[1] For details see the annual FAO report entitled *State of Food and Agriculture*. Rome, Italy. 1957.

The recent movement of prices had also tended to increase existing disparities between farm and urban incomes. Farmers as a whole had not shared fully in recent increased prosperity and in many countries had had little reward for the higher levels of productivity which they had achieved. In most countries the position of the consumer did not appear to have improved in respect to food prices. Partly because of inflationary pressures and the mounting costs of food distribution, retail food prices had tended to rise in 1956 in almost all countries, and there were few in which any appreciable decline was evident. This had tended to restrict increases in food consumption, especially in countries where incomes were low and the need greatest. In this connection, the basic importance of measures to raise food consumption levels was emphasized by most of the representatives.

Commodity Problems.—The Conference, as is the usual practice, gave much attention to current commodity problems. It noted that in the 1957-58 marketing year aggregate import demand for agricultural products might be lower, owing to the fact that some exceptional factors had contributed to the high level of trade in the past year, to disinflationary policies and to balance of payments difficulties in some countries. In contrast, world market supplies of many products would probably remain high. The agricultural surplus situation remained disquieting. The problem presented by the size of current stocks and the manner of their disposal as well as the problems involved in an adjustment of agricultural policies aimed at restoring a better balance of supply and effective demand, were thus still among the major issues confronting governments in the agricultural field.

In discussion of surplus problems, the United States said it had taken every precaution to minimize the adverse effects of its disposal program on other countries. It recognized "that in some cases unfavorable trade effects can result from disposals as large as those being made" by the United States. Canada said that certain United States transactions had had a serious impact on Canadian marketings. The U.S. Delegate said that the United States had tried to ensure that disposals did not encroach on the exports of friendly countries, through constant analysis of their impact, and frequent consultations with other exporters. The Canadian Delegate said wheat farmers operating without subsidy had no assurance of protection from "competition with products, the distribution of which is financed from government treasury". He said he realized that the United States had tried to reduce dislocation to normal trade arising from disposals but "it is incontestable that there had been damage". The Conference placed considerable emphasis on the need for full and effective observance of the FAO Principles of Surplus Disposal[1] and for a wider use of the facilities for consultation on surplus disposal matters provided by the Consultative Sub-Committee on Surplus Disposal of the Committee on Commodity Problems.

The Conference urged governments supplying and receiving surpluses to make possible full and effective consultation with other countries on disposal programs and transactions. Several countries stressed the need for prior consultation before the conclusion of surplus disposal agreements, though others felt that this might not be practicable in all cases. There was agreement, however, on the need for carefully assessing surplus disposal programs and transactions in the light of the FAO Principles. For this purpose it was necessary to have fuller knowledge of the uses of surpluses made in recipient countries and of their effects on commercial markets. The Committee on Commodity Problems had requested its Sub-Committee on Surplus Disposal to examine and report on the operation and adequacy of the FAO Principles and Guiding Lines of Surplus Disposal over the past three years and to recommend possible ways of ensuring that the disposal of surpluses would be made without harmful interference with normal patterns of production and international trade. This request arose out of the proposals made by IFAP to strengthen the Washington Sub-Committee. While the consideration given by the Sub-Committee to the request made by the Conference at its Eighth Session (Resolution No. 7/55) for an analysis of the effects of disposals on special terms had yielded some useful information, it was noted that the question of developing case studies was still under examination. The results of studies being initiated in some recipient countries in Asia and the Far East by the joint FAO/ECAFE staff under an ECAFE resolution should soon be available to the Sub-Committee.

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[1] The general principles are:

1. The solution to problems of agricultural surplus disposal should be sought, wherever, possible, through efforts to increase consumption rather than through measures to restrict supplies.
2. Member Governments which have excess stocks of agricultural products should dispose of such products in an orderly manner so as to avoid any undue pressure resulting in sharp falls of prices on world markets, particularly when prices of agricultural products are generally low.
3. Where surpluses are disposed of under special terms, there should be an undertaking from both importing and exporting countries that such arrangements will be made without harmful interference with normal patterns of production and international trade.

The Conference emphasized that, by side with such work on surplus disposal, broader studies of the underlying causes of surpluses for major commodities should also be made. The problem at first regarded as a short term one, now appeared to have become a permanent structural problem of agriculture in some countries. The solution to the problem was not to be found in one country alone, but called for a fundamental examination of national policies in general, as well as long term trends in the world economy.

The New Zealand Delegation presented a resolution on surplus disposal that was approved by the Conference. The resolution took into consideration the general discussion and the IFAP proposal and made the following recommendations:

> "that the Committee on Commodity Problems, through its Consultative Sub-Committee, develop further ways and means of utilizing surplus products for encouraging consumption without impinging upon existing or future commercial trade and in conformity with the FAO Principles and Guiding Lines of Surplus Disposal;
>
> "that Governments, through their representatives on the Committee on Commodity Problems and its Consultative Sub-Committee on Surplus Disposal, give particular attention to the attainment of these objectives as expressed by the Conference and the Committee on Commodity Problems, in order to raise world food consumption standards, to assist economic development and at the same time to expand international trade in agricultural products".

Agricultural Support Policies.—The Conference discussed the Report of the Expert Working Party on Agricultural Support Measures which had been set up under a Resolution of its Eighth Session, together with the comments of the Committe on Commodity Problems. There was general agreement that further work was necessary in this field, for which the Report of the Expert Working Party would be a useful starting point.

Some countries disagreed with the conclusion of the Working Party that, while the problems of implementing price support policies were not likely to be unmanageable when these were regarded primarily as an insurance against serious falls in price, major difficulties arose when, in order to raise the level of farm incomes, farm prices were supported over a long period at levels substantially above the average level of prices on world markets. In these circumstances, for example, open or concealed export subsidies became necessary in exporting countries, and substantial measures of protection in importing countries. The countries objecting to this conclusion pointed out that today international prices of certain products were so often influenced by various national policies that they bore little relation to production costs, or to the real values of the commodities traded; that this conclusion did not take sufficient account of the basic social objectives of agricultural support policies. Other countries strongly supported the conclusions of the Working Party in this regard.

The Conference noted that the widespread adoption of agricultural support measures in countries in all parts of the world indicated the need for some form of agricultural support. The well-known instability of prices of agricultural products and the disparity of incomes between agriculture and other sectors of the economy underlined the importance of agricultural supports on both economic and social grounds.

In the course of debate a number of points were suggested by certain countries for consideration in drawing up such a code of principles. These included the following: that guaranteed or supported price levels should not greatly exceed over a period the general level of prices in international markets; that support measures to raise incomes should as far as possible aim at doing so by reducing costs, increasing productivity and making the most rational use of resources, both within a country and between countries; that they should not become too great a burden to the consumer, but should be designed to assist a balanced expansion of consumption of agricultural products; that exports of commodities benefiting from price and income supports should be undertaken in ways that did not adversely affect production in other countries or international trade; that full attention should be given to the adverse effects which agricultural support measures in industrially developed importing countries may cause to international trade in agricultural products. It was further emphasized that in framing such principles full account should be taken of the very different economic and social conditions in countries at different stages of economic development.

The most far-reaching action on the part of the Conference was the adoption of the resolution on agricultural support measures. This was originally a Danish proposal. New Zealand and Canada were active in the phrasing of this resolution. The discussion preceding the presentation of the resolution centered on the factors contributing to the current surplus problems. Some of the delegations stated that in many instances support legislation, if not entirely responsible, contributed to the surplus problem.

The resolution endorsed:

> "the need for agreed principles to serve as guidelines for use by Member Governments in establishing or reviewing their agricultural price and income support policies in order to ensure that such policies will be effective in achieving their objectives but will have minimum adverse repercussions on the pattern of production and trade of other countries".

The Conference resolution requests the Director-General to set up a panel of government representatives, who should be specialists in agricultural support matters, to prepare a report for consideration by the Committee on Commodity Problems, the Council and member governments.

The panel is directed by the Conference resolution:

1. to analyse the effects of the various agricultural support systems, including different levels of price support, with a view to obtaining a better basis for evaluating the relative advantages and disadvantages of such systems; the study should cover the effects of the various support

measures on increasing agricultural production and investment, especially in less-developed countries and regions, and the integration of price supports with other steps taken to increase production and agricultural incomes;

2. to recommend guiding principles designed to minimize the adverse effects of agricultural support policies on international trade, and to be taken into account by member governments in establishing or reviewing their agricultural policies; in developing such principles the panel shall have full regard to the special circumstances and problems of countries.

National Programs and Policies.—The discussions of the Conference on national programs and policies ranged over a wide field. The importance in development programming of a proper balance between the different sectors of the economy and the desirability of achieving a better co-ordination of national programs and policies was emphasized. In particular, in formulating agricultural support policies or in determining the level of self-sufficiency to be aimed at, due regard should be paid to the intentions and interests of other countries as well as to purely national conditions and considerations. The Conference considered that increased productivity was an essential aim of development programming, and that greater attention should be paid to measures designed to remove the various institutional obstacles to improvement.

It was generally agreed that in many ways marketing presented problems even more challenging than those of production. Whereas few would fail to appreciate recommendations leading to an increase in production efficiency, the value of measures to improve efficiency in marketing was not always so well understood. Yet the relatively small proportion of the price paid by the consumer that was actually returned to the primary producer was a continuing grievance. Much of the difference went to pay for services valued by consumers, but in many countries there was evidence that wasteful and inefficient handling of farm, fishery and forest products and unsatisfactory market organization added much to this spread between producer and consumer prices. It was stressed that reductions in the cost of marketing was one of the best ways to improve farm incomes because in this way it could be done without a corresponding increase in consumer prices.

Measures were being taken to improve the marketing structure and organization in many countries and in a variety of fields. In order to take more advantage of this accumulating experience, the Conference agreed that periodic regional meetings of marketing personnel would be valuable. The meetings might coincide with regional Training Courses insofar as financial limitations permitted, and thus serve an instructional purpose in addition. Recognizing the usefulness of such meetings the Government of Iran issued a formal invitation to countries of the Near Eastern region to participate in a technical conference of marketing specialists in Teheran in June and July 1958. The Governments of Japan and India also offered to accommodate marketing trainees from other countries. The relevance of progress in those countries to the problems of other areas where similar conditions prevailed was noted.

It was generally felt that in most countries too little attention was paid to methods of improving nutritional levels, and that governments should give greater weight to nutritional considerations in planning their production policies. In developing food policies, nutritional principles had to be considered in the light of numerous agricultural, economic and social factors. Another important point was that the satisfaction of full nutritional requirements could not be attained at once or in the near future in many countries and must therefore be reached through successive stages. Furthermore, in planning domestic patterns of food production in relation to national consumption objectives, due consideration must obviously be given to external sources of supply.

FAO could help Member Governments in raising levels of nutrition, but the responsibility for action is that of governments. A number of governments had asked FAO during recent years for nutrition experts to assist them in relating food policies to the nutritional needs of their peoples. The Conference hoped that FAO would be of increasing assistance in this field.

Program of Work.—The activities of the five technical divisions—Agriculture, Economics, Forestry, Fisheries, and Nutrition—during 1956 and 1957, the proposed Program of Work and Budget for 1958 and 1959, presented by Mr. B. R. Sen the recently appointed Director-General, and future trends, were reviewed by the Conference.

Particular emphasis was placed on the important role consultants could play in the work of the Organization in view of the limited budget for permanent staff. A more extensive use of consultants would, in turn, make it possible to recruit permanent staff with wide basic training and broad experience, thus facilitating their transferability between projects.

The review of the program of work in the field of agriculture considered how a balance between human and natural resources (land, water, plants and animals) could best be achieved in arriving at a high level of efficiency in agriculture. It was suggested that major attention should be paid to the improvment of the institutional structures and the administrative requirements of agriculture in a number of Member countries.

While agreeing that FAO's present main lines of activity in forestry should be continued, the Conference suggested for the future some shift of emphasis towards projects which have as goals increased forest production at reduced costs and improvement of the living standards of rural populations. The latter objective, it was agreed, can be attained only through steady efforts to teach people how to make the best use of the natural resources on which they must depend. FAO can contribute through wider promotion of forest extension services and increased participation in community development movements.

With the increase in the number and activities of the regional fisheries councils, it was apparent that the cost of servicing them should be studied, and a policy should be recommended which would recognize the extent of FAO's role. It was suggested that special attention should be given to African territories south of the Sahara, especially in the fields of marketing and co-operatives. The program of work in fisheries biology should continue to give primary attention to those projects having a direct bearing on increased food production and the optimum utilization of aquatic resources; and emphasis should be laid on giving support to the efforts of individual countries in discovering and forecasting stocks.

The 1958-59 Nutrition Division program relates to food consumption and planning, organization of nutrition services, nutrition education and training and supplementary feeding; food processing and preparation; and home economics. The program is characterized by the fact that many activities are carried out in close association with other Divisions of FAO and in collaboration with other international organizations, particularly WHO and UNICEF, as well as the UN Bureau of Social Affairs and UNESCO.

Increasing emphasis is being given to the FAO home economics program and to training in home economics. Governments are requesting FAO assistance in organizing seminars and training courses in various specialized branches of home economics and for many types of workers, including teachers, extension workers, specialists and village leaders. The Conference indicated that such activities should be expanded. The contribution that home economics can make to training programs for social welfare and health workers needs further attention.

In the Economics Division the Conference assigned a high priority to all aspects of work on statistics, particularly the world census of agriculture and basic statistics on production, trade, prices and consumption. It approved the increasing emphasis being given in the work of Economic Analysis towards aiding governments to formulate policies of agricultural development, and in certain aspects of their implementation, notably marketing. The Conference also stressed that high priority should be given to work on broad price movements and on trends in agricultural trade, with emphasis on long term perspectives which might be overlooked by those considering only national and short term trends.

It was noted that there was not anywhere in the United Nations family a department specialized by commodities and commodity groups on the same lines as the FAO Commodities Branch and that adequate facilities should continue to be made available, therefore, not only for servicing the work of FAO but for assisting other agencies in response to requests for specialized work on agricultural products. Interest was expressed in the further studies to be undertaken on National Food Reserves and, more generally, on special uses of surpluses in aid of development, and on other special aspects of international commodity trade.

In addition to the continuing activities, several major expansions were approved. The regional offices are to be strengthened by additional staff and an African Regional Office is to be established. There is to be continued study of the Mediterranean Development Project—a project involving the development of agriculture and forestry in the countries bordering the Mediterranean Sea. Greater stress was also put on nutrition and home economics activities. The work in the field of atomic energy is to be expanded.

The Conference urged member countries to make more effective use of technical assistance in the face of an anticipated reduction in TA funds for the coming year. The 1957 expenditure was $8.5 million as against about an $8 million budget for 1958. Countries will have to pay greater attention to programming to ensure that reduced resources are best utilized and that the needs of agriculture are fully recognized. The Technical Assistance program, the Director-General said, should be based "on the capacities as well as the needs of each recipient country". FAO would scrutinize even more closely the extent to which each country carried out previous recommendations, supported experts with administrative and technical personnel, and continued projects that had been initiated. The number of projects a country could effectively absorb and the extent to which they related to long-term development plans, he added, would also be examined carefully.

In reviewing the operations of the Technical Assistance program, the Conference urged the desirability of improving the system of briefing experts before appointment. It was also generally felt that the periods of assignment were too brief and that necessary continuity in field work was thus disturbed. Concern was expressed over the decline in the 1958 Technical Assistance Fellowships Program as compared with previous years. It was felt that as the Technical Assistance Programme is basically a training program such a decline in the number of Fellows must inevitably reduce its effectiveness.

Canada's Representation.—In addition to membership on the Council, Canada was elected to the Committee on Commodity Problems and the Committee on Constitutional and Legal Matters. Canada is also a member of the Consultative Sub-Committee on Surplus Disposal and the FAO Group on Grains. Dr. J. F. Booth was elected to the seven-member Program Committee, which is made up of individuals selected on their personal capacity.

Epilogue.—The problems that faced the Ninth Session of the FAO Conference differed considerably from those of the First Session. The machinery has also changed. Today the FAO with its own headquarters has a staff of somewhat over 1,000 members. There are also four regional offices. In addition, there is the Technical Assistance Program including close to 600 experts in the field. These technical assistant experts are attached to some 40 country missions. There are a number of technical committees interested in specific problems, e.g. the Land and Water Utilization Committee, the European Forestry Commission, the Committee on Locust Control, the International Rice Commission and several Fisheries Councils.

Although the nature of the world food problem has changed since the first FAO meeting in Quebec City in 1945 and the Organization's resources somewhat greater, the problem is still with us. FAO estimates that at the rate the world population is currently increasing there are 120,000 new mouths to feed every day. The task that the world faces is how to produce enough to feed these new mouths, raise the level of nutrition of many millions of underfed people in many countries and at the same time prevent the piling up of unsaleable surpluses in other countries.

FLEXIBLE LOAN REPAYMENT PLAN FOR PRAIRIE GRAIN FARMS

R. C. Gilstorf

Crop yields, in the Prairie provinces, vary widely from year to year. Farmers making loan payments, therefore, sometimes find it difficult to meet the fixed annual installments. A repayment plan with some provision for flexibility in the size of the annual payments would be a welcome improvement for many borrowers. Crop share payments are a means of achieving this type of flexibility.

A Review of the V.L.A. Crop Share Plan for Wheat Farms.—Veterans who purchased wheat farms under the Veterans' Land Act may contract to make payments on a crop share basis. The present V.L.A. plan requires that the veteran, should he choose to enter the crop share payment plan, shall deliver one-half of any yield between six to 18 bushels per seeded acre of wheat. If the yield is less than six bushels per acre no payment is required. The six-bushel exemption level is designed to enable the veteran to meet most of his current crop operating expenses before making any payment to the Director, V.L.A. The veteran is free to deliver a proportion of the average yield in excess of 18 bushels per seeded acre. The plan also specifies that he shall seed a minimum of one-half his cultivated acreage to wheat each year unless a smaller acreage is approved by the Director. A wheat acreage less than one-half the cultivated acreage of the farm is sometimes approved bceause it is considered that this is still large enough to enable the borrower to repay the loan within the 25-year period.

For the purpose of calculating minimum acreage requirements, the long-time average annual wheat yield is determined for the area within which the veteran's farm is located. Municipal wheat yield data are used in Saskatchewan and shipping point yields, published by the Sanford Evans Statistical Service of Winnipeg, are used in Alberta and Manitoba. The average expected delivery under the provisions of the collateral crop share payment plan can also be determined (one-half the yield between six and 18 bushels) and, by using an average price for wheat (the V.L.A. formula has been using a price of 80 cents per bushel of wheat), the average annual payment per acre may be determined. Then, depending on the size of the V.L.A. annual installment, it is an easy matter to determine the minimum wheat acreage required to retire the total credit advance over a 25-year period. An additional ten per cent is added to the calculated minimum acreage as a safety margin. Thus, if the calculated minimum acreage is less than one-half the cultivated acreage of the farm then this smaller acreage becomes the required annual area sown to wheat.

An Appraisal of the V.L.A. Plan.—Some merits of the V.L.A. plan are as follows:

a) It is simple and easily understood.

b) The plan seems to have a considerable margin of safety in assuring the Director, V.L.A. of receiving full payment of the credit advance within the 25-year period. The total amount of credit available to the veteran is relatively small. Based on long-time yield data, one-half of the yield between six and 18 bushels, in most cases, represents payments in excess of those required to repay the total credit advance in 25 years. Also, the calculation of minimum acreage requirements on the basis of 80 cents per bushel of wheat, plus a ten per cent safety margin, provide for a fairly large acreage from which payments must be made.

c) The exemption of the first six bushels per acre, from payments, is intended to enable the farmer to meet his crop expenses and is regarded as a very desirable feature by the V.L.A. administration, as well as by the veteran.

The long-time average price of wheat, used by the collateral crop share plan in calculating the minimum acreage requirements per farm, is 80 cents per bushel. This price would seem too low. The average Saskatchewan farm price of wheat was $1.02 per bushel for the 1925-1954 period and $1.16 per bushel for the 1935-1954 period. These prices are based on Dominion Bureau of Statistics' figures and represent an average for all grades of wheat. The use of a lower price leads to a higher acreage requirement for participation in the plan. On the other hand, the Director may count on a greater margin of safety concerning the possibility of full payment within the 25-year period. The lower price, however, may prevent some operators of small farms from joining the crop share payment plan; also, farmers have to pay a larger share than would normally be required to retire a loan in 25 years.

The V.L.A. plan requires that delivery be made from all the acreage seeded to wheat even if this acreage exceeds the calcualted required minimum acreage or one-half the cultivated acreage. In some cases the result will be that the veteran who has joined the crop share plan will be repaying the credit advance at a faster rate than was actually necessary to retire the loan in 25 years.

Under the single rate-of-repayment plan different sizes of annual payments are required for farms of different sizes (in terms of acreage seeded to wheat) even though the total credit obtained may be equal. This also applies to farms of different productivities although the variation is reduced by the fact that the total credit funds obtainable under the plan were limited to $6,000 (prior to the 1954 amendment). For this reason the more productive farms usually consisted of a smaller acreage than the less productive farms and the total annual payment, therefore, would tend to be somewhat the same for both types of farms.

The crop share plan offered by the Department of Veterans' Affairs has been generally well accepted. Repayment experience has been very good. The Saskatchewan Royal Commission on Agriculture and Rural Life received suggestions from many groups that this type of plan be adopted by other credit agencies[1]. However, some farmers eligible under the V.L.A. plan said that greater use would be made of the plan if it were broadened to include oats and barley; some farmers also said that the single rate of payment was unwarrantably high.

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[1] *Veterans' Land Act Administration,* in Chapter V. *FIXED CAPITAL CREDIT* and Chapter VI. *PUBLIC PROPOSALS ON AGRICULTURAL CREDIT.* Report No. 3, *Agricultural Credit,* submitted to the Government of Saskatchewan by the Royal Commission on Agriculture and Rural Life. 1955.

Proposed Crop Share Repayment Plan for Wheat, Oats and Barley.—On the basis of this experience, the Department of Veterans' Affairs requested the Economics Division to examine the feasibility of developing a plan to include coarse grains. As a result of the study made, a plan is proposed which would differ from the V.L.A. plan in the following major aspects:

a) Several rates of payment would be included in the plan. The suggested rates are one-fifth, one-quarter, one-third and one-half of the wheat yield in excess of six bushels per acre. The appropriate rate would be determined by the size and the estimated productivity of the farm, and the size of the loan.

b) Wheat yield in excess of 18 bushels per acre would be included for computing the annual payment.

c) Payment would be required from designated acreage only and not from the entire wheat acreage if it exceeded one-half of the cultivated acreage of the farm.

d) Payment might be made in oats and/or barley rather than wheat, but somewhat greater acreages would be required with these crops in view of the lower average return per acre normally realized.

e) The creditor would be granted the option of making a cash payment equal to the value of part or all the grain he was required to deliver .

Such adjustments would meet much of the criticism of the present plan regarding inflexibility. Nevertheless, the major advantages of the present V.L.A. plan with respect to assurance that the loan would be repaid within the required number of years and recognition of the needs of the borrower in bad crop years would be retained. The changes would, however, make the V.L.A. plan more complex and difficult to explain to the prospective borrower.

Setting Repayment Rates.—In order to determine the appropriate rate of repayment it would be necessary to obtain some indication of the expected productivity of the area within which the farm is located. Long-time average wheat yields and prices would be used to obtain this information. Wheat yields in the Prairie provinces are published for crop districts by the provincial Departments of Agriculture. They are also published for towns or shipping points by the Sanford Evans Statistical Service of Winnipeg. Municipal yields are also available in Saskatchewan. However, to secure a reasonably accurate estimate of the productivity of individual farms a series of annual yields for each farm would be preferable. Yields vary between individual farms because of differences in such factors as soil texture, topography and the managerial ability of the farm operator. Historical yields for individual farms are not available in most cases and it will be necessary to use the yields published for larger areas. It is proposed to use the wheat yield data for shipping points because the area involved is smaller than either a crop district or municipality. For this reason the data will, on the average, be more representative of the yield data of individual farms within the designated area. By using the annual wheat yields during the past 25 to 30 years and the prevailing farm price of wheat during each of the years it is possible to calculate the long-time average payment which would have been made per acre of wheat under the various rates of payment. The estimates could be reduced by ten per cent to provide a margin of safety. On the basis of these calculations the appropriate repayment scheme could then be determined for each farm depending on the size of loan, size of farm and productivity of the land in the area.

Historical yield data provide the best basis for reliable estimates of future yields. Indeed, historical yields are probably a conservative estimate of future yields, barring extremely abnormal situations which may arise. The introduction of new varieties of grain, new types of farm machinery and more advanced farming methods and techniques would tend to increase, or at least maintain, average yields. Future long-term average grain prices will probably be as favorable as during the past 25-year period. This is especially true for coarse grains because of the predicted large expansion of the livestock industry within the next 20 years.[1]

As mentioned previously, considerable variation in the productivity of individual farms can prevail within municipalities and even within shipping-point areas because of differences in physical features and in the ability of the farm operators. In an attempt to make adjustments for these differences, it is proposed that in addition to the use of long-term average yield data by shipping points, to indicate productivity, that a farm assessment schedule be used for the purpose of making a simplified appraisal of the farm and farm operator at the time of application for a loan. The appraisal would be similar to that required by the Canadian Farm Loan Board or the Director, V.L.A. The necessary adjustment could then be made in the shipping point estimates. In this way unique characteristics of individual farms and operators can be assessed and the result will be a more accurate estimate of the future productivity and repayment ability of each farm.

Exemption Level.—The suggested crop share plan provides for a level of exemption of six bushels per acre of wheat, as in the present V.L.A. plan. The purpose of exempting the first six bushels from payment commitments is to enable the major portion of the current cash expenses of crop production to be met before making payments toward debt retirement. Such a feature is highly desirable because a large proportion of the cash operating expenses are a necessary annual expenditure, regardless of the size of the crop. Data on crop expenses obtained from a series of farm surveys carried out by the Economics Division indicated that the value of six bushels of wheat did meet a major portion of these cash expenses.

A wheat yield in excess of 18 bushels per acre should be included in the calculation of the annual payment because when good yields are obtained the farmer is financially able to make a larger payment. The farmer may also qualify for a lower rate of payment and thereby reduce his payment commitments in the poorer crop years. The added provision of a payment from only the designated acreage of one-half the cultivated area of the farm is preferred because it is on the basis of this acreage that the rate of payment is calculated. Should payments be required from additional acreage, if seeded to wheat, then the farmer will be repaying the loan faster than is required within the allotted time period.

Inclusion of Oats and Barley in the Plan.—The discussion, so far, has referred to repayment ability and acreage requirements in terms of wheat. However, coarse grains should be included in the plan in order to make it acceptable to the majority of Prairie grain farmers. This provision would apply, particularly, to farms in the park belt areas. Accordingly, the plan, as set up, permits payments from the oats and/or barley as well as from the wheat acreage.

The plan uses wheat as the basis for calculating expected payments, but acreage and payment requirements can be made in terms of oats and/or barley. To include oats and barley in the plan, the problem is one of relating acreage returns from these grains to wheat. Acreage equivalents are calculated, using long-term average yields and prices. The acreage equivalent for oats is the acreage of oats required to yield gross returns equal to those received from one acre of wheat. Based on the equivalents, oats and barley can then be substituted for wheat in the required ratios. Coarse grain yields equivalent to the six-bushel wheat yield level would also be calculated to determine the appropriate exemption level.

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[1] Royal Commission on Canada's Economic Prospects. Chapter 5—*Prospective Changes in the Structure of Canadian Agriculture*, 1955-80 in Drummond W. M. and W. Mackenzie, *Progress and Prospects of Canadian Agriculture* (Separate study made for the Commission). Ottawa. January 1957. pp. 102-106.

It is not possible to calculate the yield and acreage equivalents of oats and barley for each shipping point; only wheat yields are published for each town. The conversion factors would be calculated for each crop district. A series of tests were made to determine the degree of variation in acreage equivalents between areas. Municipal and crop district yield data for Saskatchewan were used. These tests indicated that the average acreage equivalents or conversion factors for each crop district plus a ten per cent safety margin would adequately represent the equivalents for smaller areas within the respective crop districts.

Table 1.—An Illustration of the Type of Farm Schedule to be Used for the Implementation of the Flexible Crop Share Repayment Plan

1. Shipping point **Craik, Sask.**
2. Long-time average wheat yield, 1932–1956 (based on Sanford Evans yield data)..........11.6 bu./acre
3. Payments under various rates of repayment per acre of wheat for 25-year period (based on average wheat yields and farm prices 1932–1956 less 10 per cent for safety margin)

(a) **For Shipping Point**

1/2 yield above 6 bu./acre..	**$86**
1/3 yield above 6 bu./acre..	**57**
1/4 yield above 6 bu./acre..	**43**
1/5 yield above 6 bu./acre..	**34**

(b) **For this Farm**
(90 per cent of shipping point payments)

1/2 yield above 6 bu./acre..	**$77**
1/3 yield above 6 bu./acre..	**51**
1/4 yield above 6 bu./acre..	**39**
1/5 yield above 6 bu./acre..	**31**

4. Crop District **No. 6**
5. Average yields, 1926–1956:

wheat	**14.3** bu./acre
oats	**25.7** bu./acre
barley	**19.7** bu./acre

6. **Exemption levels**

wheat........................ **6.0** bu.
oats (yield equiv. to 6.0 bus.)—**10.8** bus. wheat yield)
barley (yield equiv. to 6.0 bus.)—**8.3** bus. wheat yield)

7. **Acreage Equivalents:**

oats ... **1.3**
barley..**1.2**
(acreage required to give gross returns equal to those from one acre of wheat)

8. Applicant's name............ ____________
9. Address.................... Craik, Sask.
10. R. M....................... 222
11. Delivery point.............. Craik, Sask.
12. Size of farm: Total acreage.......................... **480** acres
Cultivated acreage.................... **384** acres
Required wheat acreage or its equivalent under repayment plan...... **192** acres
13. Assessment rating of farm........................ **90** per cent (obtained from a separate assessment schedule and based on such factors as soil texture, topography, etc.)
14. Size of loan **$5,000** Terms: **25 yrs. at 5 per cent**

Total principal and interest payment: **$8,869** (calculated on an amortization basis)

15. Total principal and interest payments per wheat acre $\frac{8,869}{192} = \$46$
16. Crop share required to pay for loan in 25 yrs. 1/3

Example of the Operation of the Plan.—An example of how the appropriate crop share rate of repayment would be determined is illustrated in Table 1. The schedule would be part of the application form to be used for each farm obtaining a loan on the crop share repayment basis.

The illustration assumes that a farmer located at Craik, Saskatchewan applies for a $5,000 loan, for 25 years at five per cent interest. The farmer has a three-quarter section farm, 80 per cent of which is cultivated. The plan requires that one-half the cultivated acreage be seeded to wheat or its equivalent each year, in this case 192 acres. The farm is given an assessment rating of 90 per cent. Based on the annual wheat yields for the town of Craik and the annual Saskatchewan farm price of wheat for the 1932-1956 period, the payments to be made from one acre of wheat under various rates of payment are calculated (item 3a). The assessment rating of the farm (90 per cent in the example) is applied to these payments (item 3b). In this way adjustments are made in the predicted repayment ability for the individual farm.

The approximate total cost of the loan over the 25-year period, as determined by the amortization process, is $8,869. Based on the total wheat acreage of the farm, the cost of the loan per wheat acre is $\frac{8869}{192}=\$46$. The estimated total payments of the farm per wheat acre are $51 for a one-third crop share plan and $39 for a one-quarter crop share plan (item 3b). Thus, the payments should be made on a one-third crop share basis. If the farm were located in a more productive area, a payment of one-quarter or one-fifth share of the crop would probably be sufficient. The plan permits similar adjustments for different sizes of loans and different sizes of farms.

The schedule also shows the acreage and yield equivalents for crop district No. 6 within which the shipping point of Craik is located (items 4 to 7). Based on these data, oats and barley may be substituted for wheat. The plan requires that one-half the cultivated acreage be seeded to wheat or its equivalent each year. In the exemple given 192 acres are required. For crop district No. 6, 1.3 acres of oats or 1.2 acres of barley yield the same gross returns as one acre of wheat based on long-term average yields and prices. (These figures include a ten per cent safety margin). Oats and barley could therefore be substituted for wheat at these ratios. For example, in a particular year, the farmer in the above example may wish to seed only 100 acres of wheat. He intends to seed 50 acres of oats. Fifty acres of oats are equivalent to $\frac{50}{1.3}=38$ acres of wheat. There remain 54 acres of wheat equivalent, under the crop share contract, to be made up with barley acreage. The barley acreage required is 54 x 1.2=65 acres. The exemption for oats and barley, equivalent to the six-bushel wheat exemption, would be 10.8 and 8.3 bushels respectively. For ease of administration these might well be rounded off to the nearest bushel.

Manual for Crop Share Repayment Plan.—The implementation of the plan would require a manual containing data, by shipping points, on the long-term average wheat yields and the payments forthcoming under various crop share rates of payment; the long-term average wheat, oats and barley yields for each crop district; and the exemption levels and acreage equivalents, by crop districts, for oats and barley. Table 2 indicates the type of data contained in the manual. Such a handbook would simplify the administration of the plan.

Special Provisions.—The inclusion of oats and barley in the crop share plan would encourage a larger number of operators of livestock and of mixed farms to join the plan. These farms usually have a large proportion of their total cropland acreage seeded to oats and barley for the purpose of obtaining livestock feed. The implementation of the crop share plan would involve greater administration problems and supervision for these farms than for wheat farms.

A plan which requires the actual delivery to the elevator of the share of the crop required for debt retirement may not be practical if the grain is

Table 2.—An Illustration of the Type of Manual to be Used for Implementation of the Flexible Crop Share Repayment Plan

Province....................................

Section A

Shipping point	Crop District	Long-term average wheat yield	Payments Per Wheat Acre for 25-Year Period Under Various Crop Share Rates of Payment			
			One-half share of crop above 6 bus.	One-third share of crop above 6 bus.	One-quarter share of crop above 6 bus.	One-fifth share of crop above 6 bus.
		—bu./acre—	—dollars per acre wheat—			
Clarkboro.....	8	16.0	126	84	63	50
Craik.........	6	11.6	86	57	43	34
Davidson.....	6	12.0	92	61	46	37
etc.						

Section B

Crop District	Long-term average yields			Exemption level		Acreage equivalent	
	wheat	oats	barley	oats	barley	oats	barley
	—bu./acre—			—bu./acre—		—acres—	
1.............	15.2	25.8	20.3	10.2	8.0	1.4	1.2
2.............	14.7	24.8	20.1	10.1	8.2	1.4	1.2
3.............	12.9	23.3	18.2	10.9	8.5	1.3	1.1
etc.							

required for livestock feed. It would be desirable to have a provision enabling the farmer to make a cash settlement rather than deliver the grain. In effect the farmer would purchase the share of the crop required as payment to the loaning agency. Some flexibility in the timing of payments may be necessary if the farmer selects a cash basis of payment. The livestock to which the grain would be fed may not be sold until the following spring or summer. In these conditions it would seem desirable to permit the total annual payment to be made in instalments distributed over a six- to 12-month period.

RECENT CHANGES IN CATTLE PRODUCTION IN ALBERTA AND SASKATCHEWAN

S. R. Burkell

In recent years, the rate of change in cattle production in certain parts of Canada has been greatly accelerated. This has stimulated interest in various aspects of the cattle industry and speculation over possible future developments.

This article deals with some of the changes in cattle production that have taken place on the farms of Alberta and Saskatchewan during the 1951-56 period. Basic data were secured from the Census of Canada and the Markets Information Section of the Canada Department of Agriculture.

Regional Changes in Cattle Numbers.—During the 1951-56 period, the number of cattle on farms in Alberta and Saskatchewan increased by almost 1.5 million head or slightly over 52 per cent. The percentage increase amounted to 56.7 per cent in Alberta and 46.6 per cent in Saskatchewan (Table 1). On a regional basis, the prairie area of these two provinces contributed the largest proportion of the increase in numbers. The prairie section of Alberta had a 71.9 per cent increase and that of Saskatchewan a 62.6 per cent increase in cattle numbers. The regional changes in distribution of all cattle on farms in Alberta and Saskatchewan during the 1951-56 period are depicted in Figure 1.

Along with the over-all change in cattle numbers in recent years there has also been a significant shift in types of production. This shift consists of an actual reduction in the number of cows and heifers kept mainly for milk production and a very marked increase in the number of cows and heifers kept for beef purposes. This is most pronounced in Saskatchewan where the net reduction in the number of cows and heifers for milk purposes amounted to 17.6 per cent and the net increase in beef cows and heifers to 89.3 per cent. In Alberta, the net reduction in milk cows and heifers was 4.6 per cent and

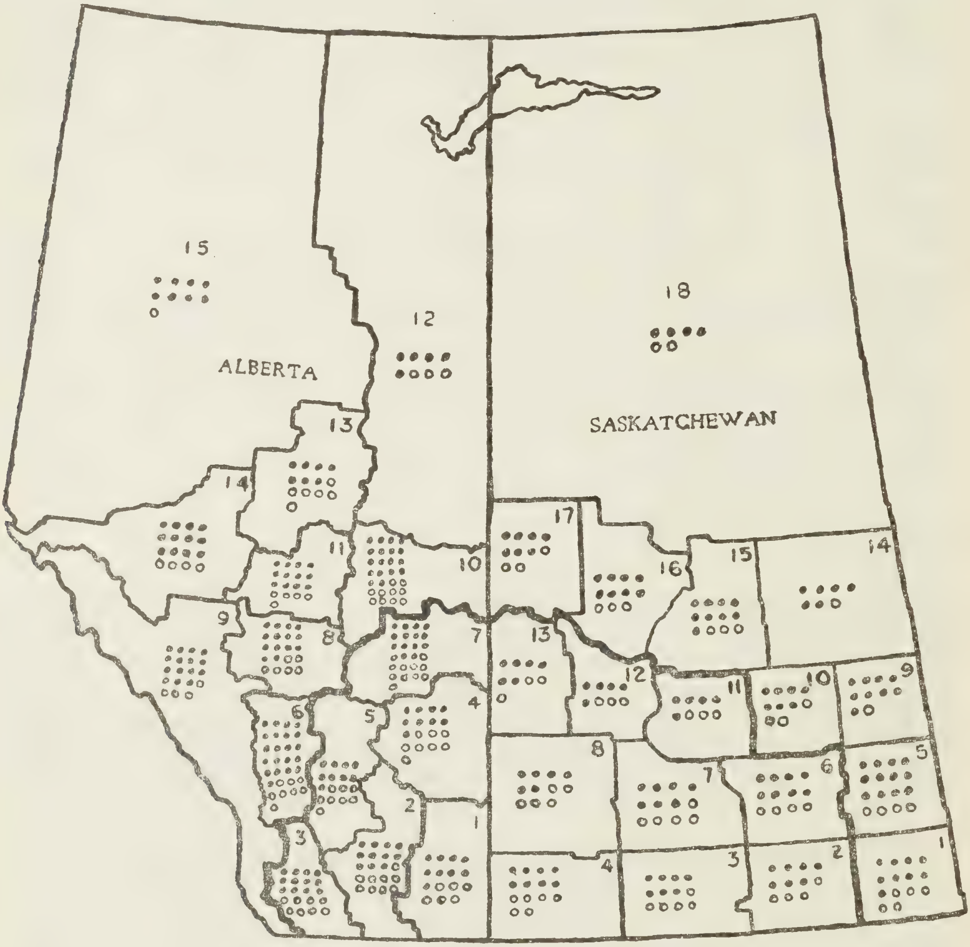

Figure 1.—Map of Alberta and Saskatchewan showing Prairie area and distribution and change in numbers of cattle in the area, June 1, 1951-56.

Figures, on the map, refer to census divisions.
Each dot represents 10,000 head of cattle, open dots representing increases to that number during the 1951-56 period.

Table 1.—Change in Cattle Numbers on Farms, Representative Areas, Canada, June 1951 to June 1956

—	All cattle			Milk cows and heifers			Beef cows and heifers		
	1951	1956	Change	1951	1956	Change	1951	1956	Change
	000's	000's	per cent	000's	000's	per cent	000's	000's	per cent
Maritime provinces	434	503	15.9	261	265	2.0	34	51	50.4
Quebec	1,641	2,003	22.1	1,106	1,279	15.6	62	109	76.4
Ontario	2,466	2,902	17.7	1,237	1,288	4.2	364	447	22.9
Manitoba	671	871	29.8	285	276	−3.0	137	232	69.1
Saskatchewan	1,275	1,869	46.6	401	331	−17.5	372	704	89.3
Alberta	1,563	2,449	56.7	359	342	−4.6	564	981	74.1
Prairie provinces	3,509	5,190	47.9	1,045	949	−9.2	1,073	1,918	78.7
British Columbia	321	423	31.6	109	112	3.1	103	150	45.0
Prairie area of Saskatchewan a)	597	971	62.6	138	101	−27.1	220	430	95.7
Park area of Saskatchewan b)	678	898	32.5	263	230	−12.6	153	275	80.2
Prairie area of Alberta c)	666	1,145	71.9	759	660	−13.2	308	535	74.1
Park area of Alberta d)	897	1,305	45.4	283	276	−2.3	256	446	74.0
Canada	8,371	11,019	31.6	3,758	3,893	3.6	1,636	2,676	63.5

a) Includes census divisions 2, 3, 4, 5, 6, 7, 8, 11, 12, and 13.

b) Includes census divisions 1, 5, 9, 10, 14, 15, 16, 17, and 18.

c) Includes census divisions 1, 2, 3, 4, 5, and 7. Because of a change in census division boundaries, the 1951 figures are approximate figures arrived at by realigning municipal divisions so as to conform with new census divisions.

d) Includes census divisions 6, 8, 9, 10, 11, 12, 13, 14 and 15. Approximate figures for 1951.

Source: *Census of Canada, Agriculture*, 1951 and 1956.

the net increase in beef cows and heifers 74.1 per cent. On a regional basis, the prairie area had the largest decreases in milk cows and heifers and the largest increases in beef cows and heifers (Table 1).

Interregional Comparisons.—The accelerated rate of increase in cattle numbers, witnessed in Saskatchewan and Alberta, did not occur in other provinces. The percentage changes in numbers in other provinces during the

Table 2.—Number of Farms Reporting Cattle, Representative Areas, Canada, June 1, 1951-56

—	Alberta	Saskatchewan	Canada
Number of farms reporting cattle (all ages):			
1951	66,971	83,533	493,322
1956	63,432	75,039	452,487
Per cent decrease	5.3	10.2	8.3
Number of farms reporting cows and heifers (2 years old and over) for milk purposes:			
1951	59,617	75,297	455,068
1956	52,396	61,205	398,604
Per cent decrease	12.1	18.7	12.4
Average number all cattle per farm reporting cattle (all ages):			
1951	23.3	15.3	17.0
1956	38.6	24.9	24.4
Average number of cows and heifers (2 years old and over) kept mainly for milk purposes:			
1951	4.7	4.1	6.4
1956	5.4	4.4	7.9

Source: *Census of Canada, Agriculture*, 1956.

Table 3.—Good to Choice Steer Marketings, Alberta and Saskatchewan, 1951-56

——	Aug.-Oct.	Nov.-June	Feb.-April	May-July	Total	Per cent of total marketings
			— Steers under 1,000 lbs. —			
SASKATCHEWAN:						
1951–2	2,843	2,464	2,168	5,803	13,278	34.0
1952–3	4,486	4,885	5,439	6,701	21,493	33.9
1953–4	4,781	5,875	7,272	8,976	26,904	32.4
1954–5	4,604	5,999	6,748	8,673	26,024	35.0
1955–6	4,413	4,739	7,285	9,534	25,971	35.1
ALBERTA:						
1951–2	2,806	2,770	5,933	16,080	27,589	48.3
1952–3	6,563	7,720	9,892	17,472	41,647	46.6
1953–4	10,003	10,233	13,590	21,223	55,049	45.0
1954–5	13,560	10,560	15,149	23,012	62,281	43.1
1955–6	19,502	12,090	17,291	28,741	77,624	57.9
			— Steers over 1,000 lbs. —			
SASKATCHEWAN:						
1951–2	3,237	3,270	2,070	5,939	14,516	62.6
1952–3	8,220	9,493	7,338	7,112	32,163	62.3
1953–4	8,173	11,291	10,242	7,358	37,064	60.8
1954–5	6,821	8,829	6,737	7,108	29,495	66.0
1955–6	6,757	7,282	6,352	8,702	29,093	62.6
ALBERTA:						
1951–2	5,873	6,932	9,064	38,927	60,796	74.4
1952–3	12,915	14,311	21,323	27,219	75,768	71.6
1953–4	14,336	15,720	25,678	21,524	77,258	68.5
1954–5	11,217	17,227	24,664	25,366	78,474	76.1
1955–6	15,469	18,148	29,383	35,068	98,068	80.1

SOURCE: *Commercial Live Stock Output* Reports.

1951-56 period were as follows: Maritimes, 15.9 per cent; Quebec, 22.1 per cent; Ontario, 17.7 per cent; Manitoba, 29.8 per cent; and British Columbia, 31.6 per cent (Table 1). Although these increases are more modest than those in Alberta and Saskatchewan, it is noteworthy that, as in Alberta and Saskatchewan, the increases in numbers were largely for cattle kept mainly for beef purposes rather than for dairy cattle.

Table 4.—Total Inward Movement of Cattle, Alberta and Saskatchewan, 1951-56

——	1951–2	1952–3	1953–4	1954–5	1955–6	Per cent increase from 1951 to 1956
SASKATCHEWAN:						
Aug.-Oct	5,864	3,050	6,412	7,371	9,559	63.0
Nov.-Jan	6,598	5,590	6,486	9,550	9,183	39.2
Feb.-April	689	2,164	3,598	2,567	2,586	275.3
May-July	2,590	3,771	4,208	4,760	6,278	142.4
Total	**15,741**	**14,575**	**20,704**	**24,248**	**27,606**	**75.4**
ALBERTA:						
Aug.-Oct	30,769	19,105	26,125	31,834	38,886	26.4
Nov.-Jan	23,273	28,584	27,240	34,080	35,602	53.0
Feb.-April	11,851	9,411	12,856	13,587	15,618	31.8
May-July	13,216	12,366	16,594	20,466	28,131	112.9
Total	**79,109**	**69,466**	**82,815**	**99,967**	**118,237**	**49.5**

SOURCE: *Commercial Live Stock Output* Reports.

For Canada as a whole the number of cattle on farms increased by almost one-third to a record high of slightly over 11 million head. Of this number, 39.2 per cent were located in Alberta and Saskatchewan.

Changes in Size of Enterprise.—The magnitude of the change in size of enterprise can be ascertained through a study of data relating to average number of cattle per farm reporting. In Alberta the average number of all cattle per farm reporting cattle increased from 23.3 head in 1951 to 38.6 head in 1956 (Table 2). The comparable change in Saskatchewan was from 15.3 head in 1951 to 24.9 head in 1956. The higher average numbers per farm reporting cattle in 1956 is the result of a net reduction in the number of farms reporting cattle as well as of an increase in cattle numbers. The net reduction in the number of farms reporting cattle amounted to 5.3 per cent for Alberta and 10.2 per cent for Saskatchewan. Along with the decrease in number of cows and heifers being kept mainly for milk purposes, in Alberta and Saskatchewan, there was a reduction in the number of farms reporting these animals with the result that the average number per farm reporting remained about the same in 1956 as in 1951.

Finish-Feeding.—Another aspect of cattle production in which some change has become evident is the increased amount of finish-feeding being carried on. One of the more obvious indications of this is a proportional as well as an absolute increase in numbers of good to choice grade steers (over and under 1,000 lbs.) being marketed out of Alberta and Saskatchewan during the 1951-56 period (Table 3). The proportional change is quite pronounced in Alberta and the proportion of steers grading good to choice is markedly higher in that province than in Saskatchewan.

Another indication of increased finish-feeding is that the number of cattle moving inward from the central markets in Alberta and Saskatchewan has increased considerably during the 1951-56 period. The total inward movement of cattle increased by 75.4 per cent in Saskatchewan and 49.8 per cent in Alberta (Table 4). Some shifts were noted in the seasonal as well as in the annual pattern of inward movement. In Saskatchewan, marked increases in the inward movement took place in the period from February to July, and in Alberta substantial increases occurred in the period from May to July.

PUBLICATIONS

Models of Man: Social and Rational. Simon, Herbert A. John Wiley & Sons, Inc. New York. 1957. pp. xiv † 287.

Herbert A. Simon is a professor of administration in the Graduate School of Industrial Administration of the Carnegie Institute of Technology. In this book, he brings together 16 of his most notable recent papers on the theory of the rational and non-rational aspects of human behavior in a social setting. All these essays, as the author says in the Preface, "are concerned with laying foundations for a science of man that will accommodate comfortably his dual nature as a social and as a rational animal ... In addition to their main objective ... these essays may serve a secondary purpose: they will supply a considerable store of material to anyone interested in the application of mathematics in social science".

The essays are grouped into four parts. Part I includes five essays, of an introductory nature, on **Causation and Influence Relations.** The other three parts consist of essays on **Social Processes; Motivation: Inducements and Contributions;** and **Rationality and Administrative Decision Making.**

Introduction to Operations Research. Churchman, C. West, Russell L. Ackoff and E. Leonard Arnoff. John Wiley & Sons, Inc. New York. 1957. pp. x † 645.

This textbook is an introductory review of a growing and promising field of scientific research. It is based on material used in a "Short Course in Operations Research" offered annually since 1952 by the Case Institute of Technology. The writers had two objectives in mind in publishing this book:

"1. To provide prospective consumers of Operations Research with a basis for evaluating the field and for understanding its potentialities and procedures.
2. To provide potential practitioners with a survey of the field and a basis on which they can plan the further education required for competence with the methods and techniques".

The authors emphasize that their book "is an introduction" and that "It is not intended to be a reference work for experienced practitioners". However, most of the chapters are followed by a copious bibliography of reference material most useful to the practitioner, the teacher, the student and others.

The book is organized into ten parts. Parts I, II, III and X and the case studies presented in other parts are of especial interest to the prospective user of O.R. All parts supply essential material to the practical practitioner.

Part I, the **Introduction**, is concerned with the meaning of Operations Research. Chapter 1 deals with **The General Nature of Operations Research**, defining the subject and explaining its characteristics. The discussion centers on the notion that the aim of O.R. is to obtain a **systems** or **over-all** approach to problems. This idea is illustrated in the following chapter on **"An Operations Research Study of a System as a Whole"**. Chapter 3 illustrates the **Research Team Approach to an Inspection Operation** with a case study which demonstrates the reason for including several disciplines in an O.R. team.

Part II delves into **The Problem**. Chapter 4, **Analysis of the Organization**, considers some tools and procedures used in the analysis of an organization, the problem, and Chapter 6 deals with one aspect of problem formulation, the Chapter 5, **Formulation of the Problem**, considers a procedure for formulating **Weighting Objectives.**

Part III, **The Model**, consists of one chapter on the **Construction and Solution of the Model**. This chapter discusses what a model is, the construction of different types of models, and their use in the solution of problems. This discussion indicates that the model represents the system under study and is useful in predicting the effect of possible changes on its effectiveness.

Part IV comprises a discussion of **Inventory Models** under the following chapter headings: **Elementary Inventory Models, Inventory Models with Price Breaks**, and **Inventory Models with Restrictions.**

Part V is concerned with **Allocation Models.** These models are used to solve a class of problems which stem from conditions where (a) many activities must be performed and there are alternative ways of performing them, and (b) resources and facilities are not available for the performance of each activity in the most effective manner. Chapter II defines and explains the uses of the simplex and transportation techniques of **Linear Programming**, techniques of great usefulness to the agricultural economists, especially those concerned with farm management, marketing, and transportation. Chapter 11 deals with a more simple technique called **The Assignment Problem**, and Chapter 13 offers **Some Illustrations of Allocation Problems.**

Parts VI, VII, and VIII discuss the **Waiting-Time Models**, the **Replacement Models**, and the **Competitive Models.** Part IX turns to the problems of **Testing, Control**, and **Implementation.** Part X winds up the discussion with a review of the problems of **Administration of Operations Research** in a chapter on **Selection, Training**, and **Organization for Operations Research.**

25

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

MARKETING SERVICE, ECONOMICS DIVISION
J. F. BOOTH, Chief

APRIL 1958 **Vol. XXVIII No. 2**

CONTENTS

		Page
The Economic Situation		27
Changes in Cropland Acreages in Manitoba, 1921–1956	*S. W. Garland*	29
The Marketing of Livestock from Farms in the Saskatoon Area	*M. Ragush*	35
Consumer Acceptance of Grade A Lean Bacon in Montreal, Edmonton and Toronto	*Charlotte I. Johnston*	39
United Nations Publications		47
Other Publications		48

EDITORIAL COMMITTEE:

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Published by Authority of the Honourable Douglas S. Harkness
Minister of Agriculture

55226-5—1

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
			1935-39=100					1949=100		1935-39=100
1913	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	85.6
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	94.6
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	108.0
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	102.0
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	109.7
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	131.4
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	164.8
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	195.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	208.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	212.4
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	187.2
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	171.9
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	187.8
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	196.3
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	199.6
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	211.5
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	226.5
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	233.0
1953	220.7	221.6	179.4	263.8	250.4	234.8	207.4	115.5	112.6	248.4
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	244.6
1955	218.9	209.7	174.4	245.1	232.7	238.3	204.6	116.4	112.1	265.8
1956	225.6	210.2	173.5	246.9	231.0	247.6	208.8	118.1	113.4	284.4
1957	....	....	....	....	....	....	....	....	....	....
1957										
July	228.2	212.7	155.1	270.2	229.8	....	....	121.9	118.2	285.2
August	227.6	212.6	153.8	271.3	230.3	259.0	209.7	122.6	120.2	284.0
Sept.	226.7	208.5	153.2	263.8	228.3	....	....	123.3	121.9	282.0
Oct.	224.8	200.7	152.8	248.6	223.0	....	....	123.4	121.7	275.7
Nov.	224.0	199.7	153.7	245.7	219.7	....	....	123.3	120.2	275.7
Dec.	225.9	204.6	155.4	253.7	224.9	....	....	123.1	118.8	271.9
1958										
Jan.	226.8	208.4	157.5	259.3	226.3	251.4	212.7	123.4	119.4	277.3
Feb.	227.7	214.0	159.6	268.4	231.5	....	....	123.7	119.9	....
Mar.	....	....	....	....	....	....	....	124.3	121.3	....
April	....	....	....	....	....	....	....	125.2	123.4	....
May	....	....	....	....	....	....	....	....	....	....
June	....	....	....	....	....	....	....	....	....	....

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1955—July 1956 include final barley and oats payments announced November 15 and 29, 1956.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Investment.—Capital expenditures in 1958, both private and public, are expected to total $8.5 billion or only $200 million short of the $8.7 billion record set in 1957, according to a recent survey made by the Department of Trade and Commerce.

Construction outlays are expected to reach $5,991 million, compared with $5,921 million in 1957. This strength in construction is largely attributable to an expected 15 per cent increase in housing expenditures. This increase, however, is likely to be partly offset by a three per cent decline in non-residential construction. Outlays for the acquisition of machinery and equipment are expected to decline by 10 per cent, to $2,530 million from $2,800 million in 1957.

The 1958 investment program features large outlays for housing and social capital which greatly offset the lower level of business capital spending. Expansion is likely to continue at the 1957 rate in secondary manufacturing, utilities, commercial building and agriculture. Large increases are expected in the construction of hospital and university facilities and in construction expenditures by all levels of government.

The demands made on Canadian manpower and materials by the investment program will be about as great as in 1957. The over-all volume of capital spending may be a little smaller than in 1957 but the expected decline will be wholly in machinery purchases, about 50 per cent of which are normally imported. Canadian sources will fill most of the requirements of the expanded construction program. Supplies of labor, materials and funds should be adequate to meet the needs of the investment program.

Population.—Canada's population increased at a record rate in 1957, reaching an estimated total of 16,887,000 on January 1, 1958, an annual increase of 543,000. This 12-month increase compares with gains of 425,000 in 1956, 384,000 in 1955, 430,000 in 1954, 423,000 in 1953, and 405,000 in 1952. The growth in population was 806,000 from the 1956 Census total of 16,081,000 and 2,878,000 from the 1951 Census count of 14,009,000.

Foreign Trade.—Canada's commodity imports declined nearly 13 per cent in value in January 1958, continuing the downward trend from the very high levels of a year earlier which have been most pronounced since October. The drop in imports was accompanied by a decline of 3.5 per cent in the value of total exports. The sharper drop in imports than in exports led to a marked reduction in the monthly commodity import balance with all countries.

Imports were estimated at $401.1 million, a drop of $57.9 million from the record total of $459 million in January 1957. Imports from the United States declined to $289.6 million from the all-time peak of $346.1 million in December 1957. Purchases from the United Kingdom rose to $38.5 million from $35.7 million but imports from all other Commonwealth countries dropped to $11.7 million from $16.3 million. Imports from all other foreign countries rose to $61.3 million from $60.9 million.

Commodity exports to all countries in January 1958 declined to $389.5 million from $403.4 million in January 1957. Shipments to the United States rose to $231.4 million from $219 million but exports to the United Kingdom declined to $60.4 million from $63.8 million. Exports to the rest of the Commonwealth rose slightly to $22.8 million from $21 million but exports to all other foreign countries declined sharply to $74.9 million from $99.6 million.

January trade yielded an estimated import surplus of $11.6 million, about one-fifth the size of the $55.6 million surplus in January 1957. The import surplus with the United States dropped sharply to $58.2 million from $127.1 million and the export surplus with the United Kingdom declined to $21.9 million from $28.1 million.

Labor.—Total employment was estimated at 5,371,000 at January 18, a decline of about 209,000 from a month earlier and of 22,000 from a year earlier. The labor force decreased by 75,000 between December and January, slightly more than in previous years.

The number of persons without jobs and seeking work was estimated at 520,000 in January, an increase of 134,000 from December. Moreover, 50,000 persons were laid off for a full week. The absolute increase over the month in the number of persons without jobs and seeking work was slightly greater than in previous years but the percentage increase was smaller than in the last five years.

Reduced activity in the trade and service industries after Christmas and winter slackening in construction, transportation equipment manufacturing, and agriculture were the major factors contributing to the decline in employment. Automobile production was slightly greater than in December but short-term layoffs continued. There was some rehiring for pulpwood operations during the month but employment in this industry was at a much lower level than a year earlier.

Canada's labor force totaled 5,891,000 in the week ended January 18, 1958 compared with 5,966,000 a month earlier and 5,696,000 in January 1957.

Consumer Prices.—Canada's consumer price index advanced from 123.4 to a new high of 123.7 between January and February 1958. A rise in the food index accounted for most of the change but upward movements in the shelter and in the "other" commodities and services indexes also contributed to the over-all rise. Both the clothing and the household operation indexes remained unchanged.

The food index rose from 119.4 to 119.9, increases being registered for most fruit, vegetable, and meat items. The greatest advances were in the prices of oranges, fresh tomatoes, and beef. The only significant decline was a further drop of four cents per dozen in egg prices.

Carloadings.—Cars of railway revenue freight loaded in lines in Canada in the seven days ended February 14, 1958 totaled 66,919, a 14 per cent decline from the 77,800 total for the corresponding week of 1957. From the beginning of 1958 to February 14 loadings dropped 5.5 per cent to 421,517 cars compared with 446,227 in the corresponding period of 1957.

Wheat.—Overseas exports of Canadian wheat totaled 4.9 million bushels in the week ending February 12, compared with 4.5 million bushels in the corresponding week of 1957. Exports in the August 1, 1957-February 12, 1958 period climbed to 134.2 million bushels from 130.1 million bushels in the corresponding period of 1956-57. Visible supplies of Canadian wheat in all North American positions at February 12 totaled 379.6 million bushels compared with 381.3 million bushels a week earlier and 358.8 million bushels a year earlier.

Farm Income.—Cash income from the sale of farm products and participation payments on previous year's Prairie grain crops in 1957 totaled an estimated $2.5 billion, about five per cent below the $2.7 billion recorded in 1956 but 7.5 per cent above the $2.4 billion realized in 1955. The all-time high of $2.8 billion was reached in 1952. Supplementary payments under the provisions of the Prairie Farm Assistance Act totaled $1.9 million in 1957 compared with $5 million in 1956 and $33.3 million in 1955. The decline in cash farm income is largely attributable to lower returns from the sale of grains, poultry, eggs and smaller participation payments.

Industrial Employment.—Industrial employment, payrolls, and average weekly wages and salaries in the week of January 1 displayed the downward movement always reported at this time of year. The employment index (1949 = 100) dropped to 117.6 from 122.5 between December 1 and January 1. Except for the 1957 figure of 121.4 this was the highest on record for January 1.

CHANGES IN CROPLAND ACREAGES IN MANITOBA, 1921-1956

S. W. Garland

Since 1921 the total area of land in farms in Manitoba has increased from 14.6 million acres to 17.9 million acres or about 23 per cent (Table 1). The amount of improved land has increased from 8.1 million to 11.5 million acres or about 42 per cent. Between 1921 and 1941 the acreage in improved land increased by about 22 per cent but between 1941 and 1946 a reverse trend took place and there was a decrease of about one per cent in the improved land acreage. Between 1946 and 1956 a new upward trend developed and the acreage in improved land increased by about 17 per cent (Table 1).

All Census Divisions have witnessed some increase in their improved land acreage since 1921, the greatest increases occurring in the more easterly and northerly parts of the province (Table 2). The greatest increases were in Census Divisions 14 and 6, with an increase of about 345 thousand acres each. These were followed closely by Census Division 5 with an increase of 326 thousand acres. The greatest relative increase in improved acreage is in Census Division 16 with an increase of about 409 per cent which, however, amounts to only 138 thousand acres. The smallest increases were in the older settled areas of the province such as Census Division 8 where the increase was only 14 thousand acres or less than two per cent.

Changes in improved land acreages were inevitably accompanied by changes in crop acreages and in the relative importance of certain field crops.

Wheat.—In 1921 wheat occupied about 31 per cent, 2.5 million acres, of the improved land area in Manitoba (Table 3). Since 1921 there has been a downward trend and in 1956 this crop occupied 2.2 million acres or about 19 per cent of the improved land.

Census Divisions 2, 3, 4, 7, 8, 10 and 11 had about 76 per cent of the wheat acreage in 1951 and about 62 per cent in 1956. The total wheat acreage increased in Census Divisions 5, 6, 9, 12, 14, 15 and 16 but did increase as a percentage of the improved land only in Census Divisions 5 and 12.

Oats.—The oats acreage increased from 1.7 million acres to 2.1 million acres between 1921 and 1956 but dropped from about 21 per cent of the improved land in 1921 to about 18 per cent in 1957 (Table 4). There was a steady decline to 1.3 million acres in 1941, or about 13 per cent of the improved land. Since then there has been a continued increase in almost all Census Divisions.

Table 1.—Total Farm Area and Distribution of the Improved Acreage, Manitoba, Census Years 1921-56

Census year	Total farm area	Total improved area	Total area under crops	Total area in pasture	Total area in summer-fallow	Other improved land	Per cent of area improved
	—thousand acres—						
1921	14,616	8,058	5,859	417	1,642	140	55.1
1926	14,412	8,346	6,261	312	1,682	91	57.9
1931	15,132	8,522	5,846	412	2,070	194	56.3
1936	15,669	8,855	6,124	426	1,974	331	56.5
1941	16,891	9,829	6,328	455	2,767	278	58.2
1946	16,671	9,773	6,445	514	2,560	254	58.6
1951	17,730	10,762	7,335	585	2,519	323	60.7
1956	17,932	11,454	7,686	595	2,828	345	63.9

Source: Census of Canada, 1921 to 1956, and *Census of the Prairie Provinces,* 1926 to 1946.

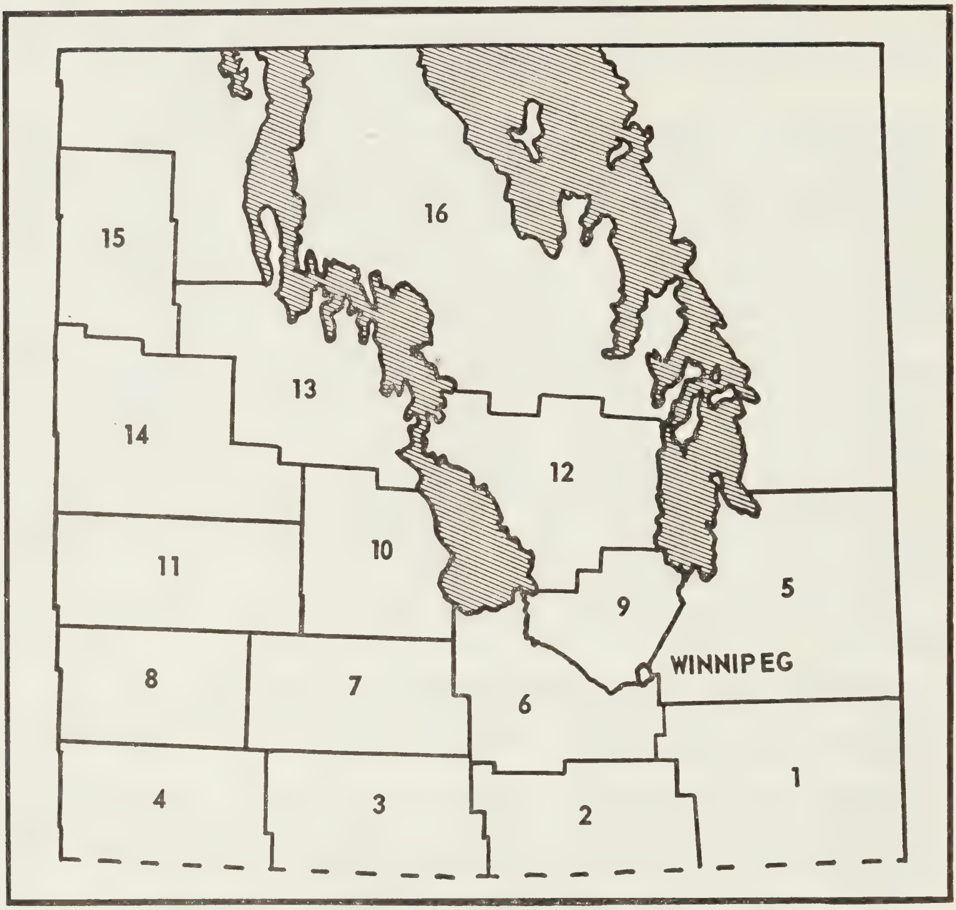

Figure 1.—Census Divisions, Southern Manitoba

The largest increases in acreages were in the northerly and easterly Census Divisions. The most noticeable change was in Census Division 11 where the acreage decreased from 244 thousand acres in 1921 to 142 thousand acres in 1956, or a drop from 31 to 15 per cent of the improved land.

Barley.—The barley acreage in Manitoba was at its low point for the period under review in 1921 when it occupied 749 thousand acres or about nine per cent of the improved land (Table 5). In 1926 the acreage had increased by about 135 per cent to 1.8 million acres, which was just over 21 per cent of the improved land. In 1931 the acreage dropped to about 13 per cent of the improved land area; it afterwards increased and reached two million acres or about 19 per cent of the improved land in 1951. In 1956 it had dropped to only about 13 per cent of the improved land area.

Summerfallow.—The summerfallow acreage has increased since 1921 both in numbers of acres and as a percentage of improved land. Summerfallow was about 20 per cent of the improved land area in 1921 and 1926 and almost 25 per cent in 1956 (Table 6). As a proportion of the improved land area the summerfallow acreage reached a high of 28 per cent, for the census years

Table 2.—Total Area of Improved Land by Census Divisions, Manitoba, Census Years 1921–56

Census Division	Census year							
	1921	1926	1931	1936	1941	1946	1951	1956
	—thousand acres—							
1	167	175	191	233	293	290	320	364
2	990	1,010	1,038	1,080	1,179	1,134	1,189	1,186
3	874	933	966	972	997	947	1,005	1,045
4	944	947	967	900	935	922	957	1,002
5	169	197	223	276	404	408	454	495
6	857	889	922	1,002	1,109	1,100	1,154	1,200
7	760	774	757	774	786	757	830	864
8	766	751	716	716	689	693	743	781
9	265	272	300	312	414	414	492	543
10	496	492	485	493	571	598	682	745
11	780	805	818	815	863	858	928	971
12	107	110	107	126	186	214	302	371
13	260	271	268	314	390	384	458	527
14	460	524	554	591	664	670	734	805
15	129	153	166	196	253	272	352	383
16	34	43	44	55	96	112	162	173
Provincial total	8,058	8,346	8,522	8,855	9,829	9,773	10,762	11,455

Source: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

Table 3.—Wheat Acreage as a Percentage of Improved Land by Census Divisions, Manitoba, Census Years 1921-56

Census Division	Census year							
	1921	1926	1931	1936	1941	1946	1951	1956
	—per cent—							
1	20.7	9.2	10.9	9.2	12.2	10.5	9.6	9.4
2	33.3	30.4	38.2	42.6	28.6	30.5	27.8	20.5
3	34.0	28.3	37.2	39.1	29.0	29.0	23.9	22.1
4	37.7	34.0	38.8	39.0	33.0	34.7	27.6	22.5
5	21.0	16.8	18.3	18.3	26.4	23.9	20.1	23.2
6	26.7	22.2	30.4	28.8	23.8	28.3	24.4	24.3
7	36.0	30.6	33.7	30.0	23.3	24.5	20.0	19.4
8	33.5	26.0	31.8	29.4	24.1	27.2	22.4	20.8
9	21.1	12.2	20.2	15.5	18.2	17.5	13.0	15.0
10	34.8	19.1	25.7	19.6	20.0	19.8	15.0	17.1
11	29.0	18.3	25.3	20.7	25.8	26.5	23.3	20.4
12	13.7	11.0	12.9	9.8	17.1	16.6	18.6	17.6
13	33.4	22.2	25.7	24.1	23.3	20.1	18.0	15.5
14	21.8	22.3	25.4	20.6	25.6	24.8	20.5	14.3
15	25.3	28.3	23.0	14.7	20.6	19.6	16.8	11.4
16	19.2	15.5	16.8	18.2	17.9	15.6	14.2	9.7
Provincial total	31.1	25.0	30.7	28.9	25.1	25.8	21.6	19.2

Source: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

Table 4.—Oats Acreage as a Percentage of Improved Land by Census Divisions, Manitoba, Census Years 1921-56

Census Division	Census year							
	1921	1926	1931	1936	1941	1946	1951	1956
				—per cent—				
1	21.3	22.6	21.4	19.0	16.2	17.5	19.5	24.6
2	15.8	14.7	13.6	12.2	10.1	13.2	14.9	18.9
3	19.4	16.8	15.6	14.5	12.4	12.7	12.9	14.7
4	15.6	16.5	14.3	11.1	11.2	12.1	12.8	11.5
5	18.3	20.6	20.3	17.8	15.3	14.6	14.7	22.9
6	15.7	14.4	13.4	12.4	10.0	12.7	14.8	18.7
7	18.0	17.9	16.6	15.8	14.2	15.6	16.7	19.4
8	21.1	18.9	17.8	15.0	13.5	14.2	16.8	16.8
9	20.2	21.4	19.5	15.9	13.6	14.5	14.2	19.5
10	19.8	21.9	17.8	17.6	14.9	15.6	19.0	22.8
11	31.4	30.6	26.3	24.4	16.4	14.5	14.9	14.6
12	30.5	31.9	24.7	21.6	18.2	14.6	14.0	18.5
13	21.9	24.5	19.7	19.0	16.3	15.6	14.5	17.2
14	36.3	27.7	24.5	26.4	16.8	15.8	17.1	18.7
15	25.2	21.1	22.3	20.3	14.1	14.8	14.5	19.9
16	30.4	33.3	29.9	24.6	20.0	17.1	15.9	17.2
Provincial total	20.7	19.8	17.8	16.4	13.4	14.1	15.3	17.9

Source: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

Table 5.—Barley Acreage as a Percentage of Improved Land by Census Divisions, Manitoba, Census Years 1921-56

Census Division	Census Year							
	1921	1926	1931	1936	1941	1946	1951	1956
				—per cent—				
1	9.5	13.6	13.2	15.5	14.8	12.9	12.6	7.0
2	12.0	20.4	12.1	14.2	17.4	18.7	19.1	10.2
3	10.8	23.8	16.3	16.8	18.9	22.4	20.7	17.3
4	5.3	18.5	11.6	9.5	11.8	10.5	9.4	8.8
5	8.6	14.1	11.8	19.4	15.5	16.5	18.1	9.6
6	12.6	25.4	15.2	21.9	20.4	17.8	22.3	11.8
7	7.6	17.9	12.6	14.1	14.7	16.6	17.4	9.8
8	7.4	20.8	13.2	12.4	11.7	14.6	12.8	11.2
9	11.2	25.3	18.1	28.8	23.4	26.3	32.0	20.1
10	6.7	23.3	12.3	15.6	15.4	15.7	18.6	8.5
11	6.2	23.2	12.4	18.5	12.5	17.4	18.9	18.5
12	13.5	11.4	11.1	13.4	13.0	16.6	18.4	12.1
13	9.7	20.7	11.7	12.3	11.3	14.9	18.3	12.4
14	10.9	20.6	11.5	15.1	12.0	17.1	22.7	22.2
15	22.3	21.8	15.3	23.9	22.8	23.0	28.5	26.8
16	9.4	11.0	11.0	8.9	9.6	13.7	18.1	15.6
Provincial total	9.3	21.1	13.2	16.1	15.7	17.3	19.0	13.5

Source: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

Table 6.—Summerfallow Acreage as a Percentage of Improved Land by Census Divisions, Manitoba, Census Years 1921-56

Census Division	Census year							
	1921	1926	1931	1936	1941	1946	1951	1956
	—per cent—							
1	15.2	20.4	15.4	11.5	11.3	14.6	14.0	12.5
2	17.3	16.6	18.6	14.3	19.7	19.2	16.0	16.5
3	20.2	16.8	21.8	21.2	29.3	26.4	25.3	26.9
4	24.6	20.9	27.4	24.0	31.5	26.4	27.6	30.3
5	18.0	23.0	16.6	12.9	15.7	20.3	19.9	18.3
6	19.9	19.8	23.2	20.1	27.1	22.6	19.9	17.7
7	23.6	20.9	25.8	24.3	31.3	28.0	25.7	26.8
8	24.9	23.4	26.9	26.4	36.2	32.7	29.6	32.1
9	19.1	24.1	23.6	20.5	24.7	24.9	20.7	19.2
10	21.2	20.3	26.4	25.1	28.5	26.9	22.9	25.9
11	23.9	22.0	31.1	29.9	38.6	35.0	31.6	34.4
12	13.4	26.2	16.6	18.0	14.9	16.5	12.0	15.9
13	12.6	19.6	23.3	26.8	28.2	30.0	21.7	23.5
14	14.2	20.8	28.0	27.7	35.6	33.2	28.7	31.8
15	6.0	13.8	20.8	20.8	26.0	27.0	24.5	26.8
16	7.7	24.8	22.1	23.4	17.8	23.6	17.8	24.9
Provincial total	20.4	20.2	24.3	22.3	28.1	26.2	23.4	24.7

SOURCE: *Census of Canada*, 1921 to 1956, and *Census of the Prairie Provinces*, 1926 to 1946.

under review, in 1941. This was a result of the Wheat Acreage Reduction Program of the Federal Government which authorized paying wheat producers to reduce their wheat acreage and increase summerfallow. In terms of acreage this high was reached in 1956 with a total of 2.8 million acres in summerfallow.

Other Grain Crops.—The acreage in rye, flax, buckwheat and corn varied from a low of 163 thousand acres in 1931 to a high of 945 thousand acres in 1956, about two and eight per cent respectively, of the improved land area (Table 7). Flax was the most important of these crops in terms of acreage occupied. Rye has held second place and corn third place until 1956, when the buckwheat acreage increased to take third place. Grain corn and buckwheat are grown almost entirely in Census Divisions 2 and 6. Rye, flax and fodder corn are grown throughout the province with the acreages in each district varying greatly from year to year.

Forage.—There has been an upward trend in the acreage seeded to forage crops between 1921 and 1956[1] (Table 7). In 1956 forage occupied close to 11 per cent of the improved land whereas in 1921 it had occupied only six per cent of the improved area.

Special Crops.—Field peas, sugar beets and sunflowers have been grown in Manitoba for many years, but only since 1941 has the acreage become relatively important. In 1956 field peas occupied about 56 thousand acres, sugar beets 24 thousand, and sunflowers 33 thousand acres. During World War II a demand arose for oil-bearing seeds to supply certain necessary vegetable oils. The sunflower acreage was enlarged and rape was introduced. The acreage in rape amounted to only a few hundred acres until 1956; in that

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[1] See Smith, W. G. "Trends in Forage Production in Manitoba." *The Economic Annalist*, February 1955, pp. 10-15.

Table 7.—Acres in Forage, Rye, Flax, Corn, Buckwheat, Some Special Crops, Manitoba, Census Years 1921-56

	Census year							
	1921	1926	1931	1936	1941	1946	1951	1956
	—acres—							
Forage	480,564	519,185	707,566	812,861	868,040	824,338	983,797	1,229,159
All rye	175,262	225,482	50,390	88,326	157,376	20,745	25,770	68,446
Flax	54,139	195,364	101,364	89,133	172,250	304,567	654,995	788,855
All corn	7,983	15,427	8,236	31,261	113,112	28,365	40,711	26,257
Buckwheat	635	12,691	3,381	4,374	3,108	[a]	7,395	61,837
Special crops [b]	1,582	818	8,222	3,374	18,060	69,377	55,248	142,140

[a] None reported.

[b] Includes: field peas, sugar beets, sunflowers, rape for seed. In the past there has been some variation in the groupings used for reporting these special crops, therefore, the acreages shown may be only approximate.

Source: *Census of Canada*, 1921 to 1956, *Census of the Prairie Provinces*, 1926 to 1946, and *Report on Crops and Livestock etc.*, The Department of Agriculture and Immigration, Province of Manitoba, 1921–56.

year it increased to 29 thousand acres. The growing of crops such as soybeans and mustard seed is at present in the experimental stage. The special crops are grown almost entirely in Census Divisions 2 and 6.

Summary.—Although the acreage in improved land continued to increase in Manitoba between 1921 and 1956 and changes occurred in the relative importance of the various field crops, few definite trends have been established. The most noticeable long-time trends are the decrease in the relative size of the wheat acreage and the continuing increase in both the absolute and the relative size of the forage acreage. The acreages, and the number of varieties, of special crops have increased substantially in recent years.

Many factors can influence a change in the acreage of a particular crop. An increase in the acreage in improved land allows a comparable increase in the crop acreage. The development of earlier maturing varieties of cereal grains, allows them to be grown successfully in the more northern portions of the province. The increase in the forage acreage is due, at least in part, to the realization by farmers of the need for soil improvement crops. The provincial government of Manitoba has initiated programs to encourage farmers to seed land to forage. Restricted delivery quotas and storage difficulties encountered with the cereal grains along with an increased demand for oil-bearing seeds have encouraged the production of specialized crops.

The improved land area in Manitoba can continue to increase as economic conditions warrant the development of localized areas in the northern part of the province. Any increase in acreage will be very slow in the future. The prospect of any appreciable change in the acreage of cereal grains appears very remote. Any reduction would have to come as a result of land having been taken out of cultivation or of an increase in acreage of special crops and forage. Forage acreages may increase slightly as farmers switch to some soil improvement program or to produce more animal products for an expanding population. The expansion of the acreage seeded to the more specialized crops will depend on the development of markets.

ERRATUM

In the article by W. Darcovich on "Farm Organization and Resource Productivity in Some Beef Producing Areas of Alberta", line 4, paragraph 2, page 136 of the December issue of *The Economic Annalist*, please delete "in the Foothills district" at the end of the sentence.

THE MARKETING OF LIVESTOCK FROM FARMS IN THE SASKATOON AREA

M. Ragush

Livestock marketing involves many processes which begin at the producer's farm and end with the sale of meat to the consumer. The physical marketing process is simple if the producer is able to sell his livestock to the consumer directly. For most of the livestock marketed, however, the animals pass through many channels before the meat reaches the consumer.

An economic survey was conducted in the Saskatoon market area in 1955 and 1956 to determine what practices are followed in the production and marketing of cattle and hogs. This study was concerned with: (a) the factors of production which influence market decisions; (b) most of the marketing processes from the time the farmer decides that his cattle and hogs are ready for market until they are sold; and (c) the agencies and facilities that carry on the processes of market selection, assembly, transportation, and selling. The boundaries of the survey area were delineated to include only that area for which Saskatoon was considered to be the main or at least a major alternative market. This area corresponded roughly with census divisions 11, 12 and 13 (Figure 1).

A unique randomized sampling was used to select market localities and farms within market localities. Three circles or arcs of 50 and 100-mile radii were drawn on a map with Saskatoon as the centre. The points at which these circles crossed the main railway lines within the Saskatoon market area represented the market localities. At the 50-mile radius the market localities were in the vicinity of the towns of Conquest, Harris, Biggar, Sonningdale, Maymont, Rosthern, Wakaw, Bruno, Viscount, Watrous and Kenaston; at the 100-mile radius the market points were Beechy, Plato, Brock, Kerrobert and Unity; at the 150-mile radius only localities on the main railway lines crossing the Alberta-Saskatchewan border were selected: these were Mantario, Alsask, Loverna, Cactus Lake and Senlac. The sampling of farms in each market locality was done along the transections of market roads running between railway lines north and south or east and west through the market points. The length of each transection was one-half the distance between the adjacent railway lines and varied from 12 to 47 miles. To keep the sample size to a minimum only alternate farms along a transection were visited. The number of farms visited in each market locality varied from three to 19 depending on the length of the transection, the number of farms along it, and the distribution of these farms. A total of 190 farmers were visited in the 21 market localities selected.

Of the 190 farms 143 were engaged in cattle and hog production for commercial purposes. The farms keeping cattle for commercial purposes represented 75 per cent of the 190 farms compared with 67 per cent for all farms in census divisions 11, 12, and 13; the corresponding figures for farm raising hogs were 40 and 42 per cent respectively.

Market Selection.—Although market localities were selected on the basis of their orientation to the Saskatoon market many livestock sales were made elsewhere. Fifty-seven per cent of the cattle and 48 per cent of the hogs marketed during the survey years were sold at stockyards and packing plants in Saskatoon. Twenty-five per cent of the cattle and 20 per cent of the hogs were sold locally to farmers and butchers and private buyers or drovers. The remaining 18 per cent of the cattle and 32 per cent of the hogs were sold at other markets. Other markets were Winnipeg, Edmonton, Prince Albert, Lloydminster, Calgary, North Battleford, Moose Jaw, and Swift Current. The proportion of cattle and hogs decreased as the distance from farm to Saskatoon increased (Table 1).

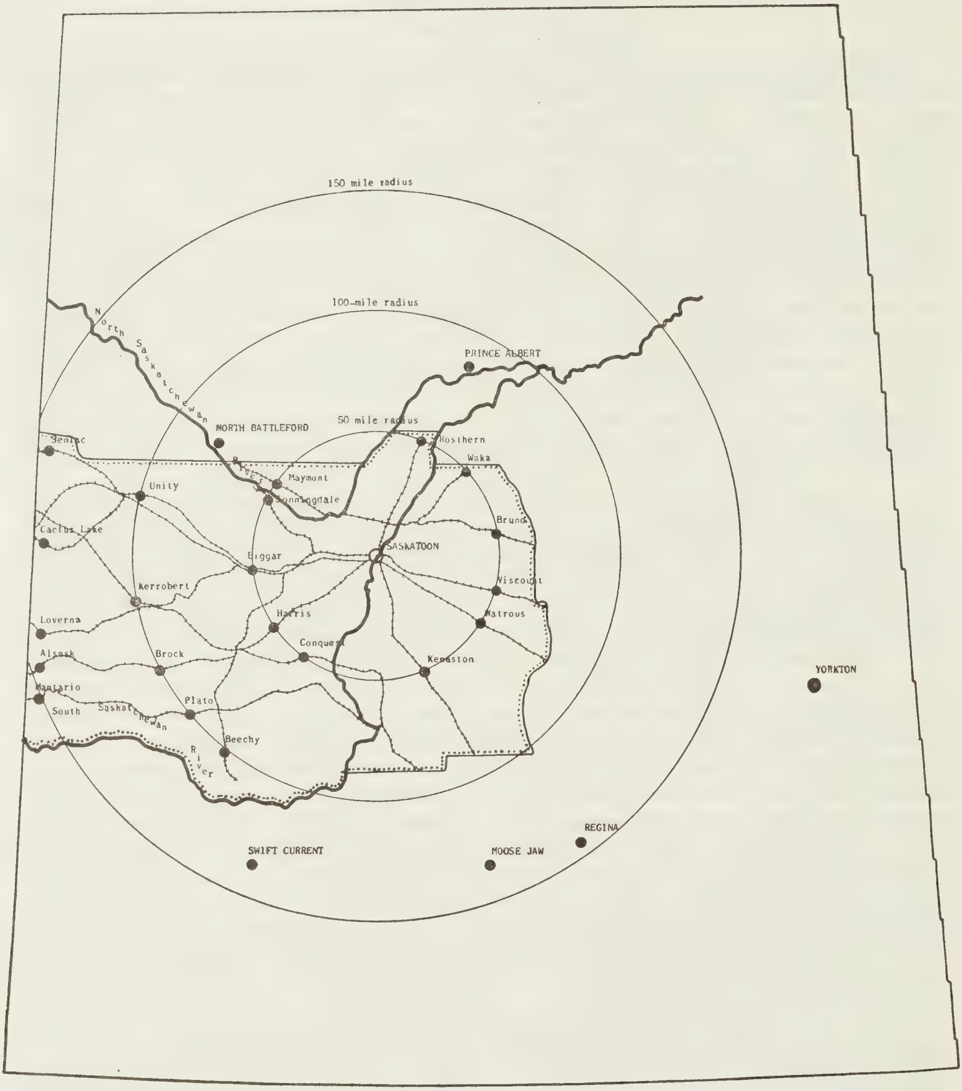

Figure 1.—Saskatoon Market Area

Market selection is influenced to a large extent by the accessibility of satisfactory alternative markets through suitable market roads or railway lines, shipping facilities, and habit to some extent. About two-thirds of the respondents said that they could have used other points to market their cattle. The remaining third said they had no alternative outlet. Distance to market and price of cattle at the selected market were the main reasons given for the choice of a specified market point. Those farmers who produced large numbers of cattle usually said that they selected the markets at which they were likely to get the highest net returns. Those with smaller numbers of cattle to sell each year mentioned such factors as distance to the market, familiarity with marketing facilities at a particular market point, and the importance of the market point as a shopping center. The failure of small-scale producers to mention comparative prices at the various markets may have been associated with difficulties in making good use of alternative markets.

Where the cattle and hogs were handled by a commercial trucker the choice of market point was often stipulated by the trucker. Most of the cattle sold locally were sold to private buyers or drovers. The sale of cattle at the farm to drovers was largely a matter of convenience, except for some of the farmers at the 150-mile radius. No outright sales of hogs to drovers were reported, largely because of the regulations governing the payment of quality premiums on hogs. The premiums are paid only to hog producers and only on the basis of carcass grade.

Table 1.—Disposition of Cattle and Hogs, According to Markets, from 190 Selected Farms, Saskatoon Area, 1955-1956.

Market	Farms at 50-mile radius from Saskatoon		Farms at 100-mile radius from Saskatoon		Farms at 150-mile radius from Saskatoon		All farms	
	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs
	—per cent of cattle and hogs—							
Saskatoon	67	56	65	41	31	15	57	48
Winnipeg	9	...	16	31	...	41	8	9
Edmonton	...	...	...	...	16	...	4	...
Prince Albert	5	20	...	...	...	...	3	15
Lloydminster	...	...	...	...	5	...	1	...
Calgary	...	...	...	...	5	1	1	...
North Battleford	1	5	2	13	...	...	1	5
Moose Jaw	...	...	...	...	2	12	...	2
Swift Current	...	...	1	7	...	...	...	1
Private buyers	14	...	10	...	33	...	19	...
Local farmers and butchers	4	19	6	8	8	31	6	20

Transportation.—Seventy-eight per cent of the cattle marketed during the survey year were transported to market by truck. The trucking was done by commercial truckers, drovers, butchers, the producers themselves and other local farmers. A smaller proportion of cattle was transported by rail from farms at the 150-mile radius from Saskatoon than at the 100 and 150-mile radius. The proportion of cattle transported by rail from farms at the 50, 100 and 150-mile radiis of Saskatoon was 9, 35, and 37 per cent respectively.

For hogs, which bruise easily, shrink rapidly and suffer from extreme temperatures, speed of delivery to market was particularly important. Eighty per cent of the hogs produced on the sample farms were trucked to market. The proportion of hogs trucked to market from farms at the 50, 100 and 150-mile radiis of Saskatoon was 100, 43, and 9 per cent respectively. The farmers who used the railway facilities were usually located close to an assembly point which was on a direct railway line to a market outlet.

Buying and Selling Methods.—In the buying and selling of cattle, the most usual point at which deals between buyer and seller occur is at the stockyards. Seventy-three per cent of the cattle marketed during the survey year by the producers in the sample were sold at the stockyards. Other points at which the marketing process of buying and selling occurred were the farms of the sellers and packing plants (Table 2).

Selling directly to packing plants was the predominant practice in marketing hogs. Forty-six per cent of all hogs compared with only two per cent of the cattle were sold directly to packing plants. The farmers gave several reasons for selling hogs directly to packing plants. In periods of heavy marketings there was less chance of price fluctuations after the last market report was received and the hogs left for direct delivery to a packing plant than when they were held over for sale at a large public market. Marketing charges, including yardage, feed and commission, together with the shrink factor, were also said to be lower when hogs travelled directly from the farm to the plant.

Deals between buyers and sellers occurring at the stockyards were by auction. Cattle and hogs sold at the farm and packing plants were by treaty. Treaty selling was on a per head basis when the deal was between the producer and the drover at the producer's farm. Sale of animals by treaty to packing plants and local butchers was on a carcass weight basis. When other farmers were buyers, the cattle and hogs were usually sold by carcass weight if used for consumption and on a per head basis if used as foundation stock and feeders.

Table 2.—Methods of Selling Cattle and Hogs, 199 Selected Farms, Saskatoon Market Area, 1955-56.

Method of sale	Farms at 50–mile radius from Saskatoon		Farms at 100–mile radius from Saskatoon		Farms at 150–mile radius from Saskatoon		All farms	
	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs	Cattle	Hogs
	—per cent of cattle and hogs—							
Direct or treaty								
Packing plants..........	3	44	....	50	....	49	2	46
Local farmers and butchers.............	4	19	6	8	8	31	6	20
Drovers...............	14	....	10	....	33	....	19	....
Indirect or auction								
Commission firms......	38	3	73	....	36	7	43	3
Co-operative associations	41	34	11	42	23	13	30	31

The producers had full access to the facilities at the stockyards and could sell their own stock. However, all selling was done by sales agencies whose function it was to negotiate sales on behalf of producers. The sales agencies were commission firms that usually operate on several western stockyards with the Livestock Division of the Saskatchewan Wheat Pool acting as agent for the local co-operative associations.

Factors of Production Influencing Livestock Marketing.—Producers whose livelihood depend largely on their ability to produce grain often included livestock as a secondary and very minor enterprise on the basis of non-interference with their grain farming operations. The practice of timing the arrival of spring calves so that there was a minimal clash with spring seeding operation was fairly common. Cattle marketed "off grass" in the fall were generally scheduled for market after the grain crop was harvested.

Because of the severe winters in the Saskatoon area, farmers arrange their livestock programs so that most of the young animals are born in the spring season. Cattle are raised mainly on grass and heavy marketings occur just before the weather gets so cold that it would become necessary to feed by hand and provide shelter. The hog program does not include fall litters. The raising of hogs during the winter months would entail the building or maintenance of shelter facilities and high labor costs; moreover, many farmers cannot find any value other than nuisance value in a hog business which is operated as a secondary enterprise. The preponderance of spring litters means that most of the hogs raised in the survey area are marketed during the late fall and early winter months.

The quality of the animals marketed is largely influenced by the grade and breed of the foundation stock. The use of beef type purebred sires, a highly commendable practice, is common throughout the survey area. The dams, on the other hand, are generally of mixed parentage and often of mediocre quality.

CONSUMER ACCEPTANCE OF GRADE A LEAN BACON IN MONTREAL, EDMONTON AND TORONTO

Charlotte I. Johnston

The volume of sales of a product introduced on the market indicates in general whether or not it has been received favorably. However, direct questioning of actual and potential purchasers may elicit much information valuable to those selling the commodity.

Grade A Lean bacon was introduced in Montreal in January and sold until June, 1956[1]. During a week in April the attention of bacon customers was drawn to it by demonstrators stationed in the three stores where it was sold. Two questionnaires were mailed to 1,547 of those who bought the Grade A Lean bacon during that time. The first questionnaire, mailed a few days after the end of the demonstration, was returned by 39 per cent of these buyers and the second, sent about a month later, was returned by 32 per cent.

In Edmonton and Toronto the demonstrations were held early in the selling periods which extended from November 1956 to March 1957 in Edmonton and from January to March 1957 in Toronto. Names and addresses were collected from 1,390 purchasers of Grade A Lean bacon in Edmonton, and from 1,152 in Toronto. These names were sorted into four groups of equal size and questionnaires were mailed to the four groups in succession. The first mailing was made one week after the end of the demonstration. Subsequent mailings occurred at two-week intervals, except that to avoid the Christmas season there was a five-week interval between the first and second mailings in Edmonton. The purpose of successive questionnaires was to find out what changes took place in customers' attitudes towards the Grade A Lean bacon as time passed. Thirty-seven per cent of all those who received a questionnaire, in Edmonton, and 34 per cent of those in Toronto, returned replies by mail.

Questionnaires sent to the Edmonton and Toronto shoppers were similar to each other but different from those sent to the Montreal group. In the following discussion, therefore, when no statement is made about Montreal with respect to certain points it may be assumed that information was not obtained from Montreal buyers regarding that phase of the subject. Another difference in method between the earlier and later surveys was that in Edmonton and Toronto many who did not return the questionnaire by mail were interviewed by telephone. The data thus obtained referred to the two weeks immediately preceding the telephone calls.

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[1] See Drayton, L. E. "Sales Tests with Graded Side Bacon." *The Economic Annalist* October, 1957.

Purchases of Grade A Lean Bacon.—In Edmonton and Toronto those who replied by mail to the first questionnaire bought Grade A Lean bacon at the rate of almost one quarter of a pound per adult-equivalent unit[1] per week over a two-week period, which included the demonstration week when each respondent had bought some Grade A Lean bacon (Table 1). As expected, purchases reported by mail were lower in the three latter periods. The average rates from Edmonton and Toronto were remarkably close, about one-sixth of a pound per unit per week, but whereas Edmonton purchases reported by mail remained almost constant after the demonstration, those in Toronto fluctuated considerably.

Those replying by telephone bought less, and in most cases much less, Grade A Lean bacon per unit than did those who replied by mail in about the same two-week periods. Since the heaviest users of a product are usually those most interested in it, it was to be expected that those who used most Grade A Lean would be most willing to answer the questionnaire. It is very likely that those who did not reply by mail and were not reached by telephone were similar to those who were interviewed by telephone in respect to their interest in, and use of, Grade A Lean bacon. On that assumption, the mail and telephone replies received for a period near that designated on the questionnaire were obtained, the telephone replies being weighted to represent those from

Table 1.—Grade A Lean Bacon Purchased per Adult—Equivalent Unit[a], per Week, by Reporting Group and Method of Report, Edmonton 1956-1957, and Toronto, 1957

Two-week period ending	Number reporting	Edmonton		Two-week period ending	Number reporting	Toronto	
		Method of reporting				Method of reporting	
		Mail	Telephone			Mail	Telephone
		pounds per unit per week				pounds per unit per week	
Dec. 8........	118	0.24	—	Feb. 2.........	110	0.26	
Dec. 17–19....	83	—	0.16	Feb. 16........	90	0.17	
Jan. 7–9.......	17	—	0.18	Feb. 23–27.....	123	—	0.06
Jan. 12........	136	0.19	—	Mar. 2.........	90	0.22	—
Jan. 22–25.....	62	—	0.07	Mar. 9–15......	83	—	0.06
Jan. 26........	133	0.18	—	Mar. 16........	89	0.12	—
Jan. 28–31.....	52	—	0.09	Mar. 19–25.....	40	—	0.10
Feb. 5–8......	37	—	0.14	Mar. 29–Apr. 1.	18	—	0.14
Feb. 9........	120	0.17	—	—	—	—	—
Feb. 11–14....	53	—	0.09	—	—	—	—
Feb. 27-Mar. 4	89	—	0.06	—	—	—	—
Jan. 26[b].......	247	0.12	—	Mar. 2.........	213	0.10	—
Feb. 9[b].......	210	0.13	—	Mar. 16........	172	0.08	—

(a) On the basis of adult requirements of meat and fish.

(b) Mail and telephone data combined, the latter weighted to represent replies from all not replying by mail.

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[1] The conversion of children to "adult-equivalent units" allows comparison of purchases of bacon by groups of households consisting of different proportions of adults and children of different ages, who do not require bacon in equal quantity. The following conversion factors were used: 5 years and under, 0.3 units; 6-10 years, 0.5 units; 10-16 years, 0.7 units. The values are based on information as to requirements of meat and fish supplied by the Nutrition Division, Department of National Health and Welfare.

whom no reports were obtained. The number of telephone returns received made such a combination possible for only the last two questionnaires in each of the two cities.

When purchases of Grade A Lean bacon per unit were computed, as described above, the rates of both the third and fourth periods in Edmonton were found to be higher than those in Toronto. It should also be remembered that the last reporting periods for Edmonton were three weeks further from the demonstration week than were those of Toronto. On the other hand, the price conditions under which Grade A Lean bacon was sold in the two cities prevent completely valid comparisons. Although the price of Grade A Lean bacon was kept at a premium above that of the best quality brand of the company supplying Grade A Lean bacon, the prices of the brands to which that of Grade A Lean bacon was not tied varied widely at different times in each city.

Purchases of Grade A Lean Bacon Related to Kind Previously Bought.—In both Edmonton and Toronto about two-thirds[1] of those stating the type of bacon usually bought before Grade A Lean was introduced named a higher-priced brand of side bacon. Between one-fifth and one-fourth reported having bought low-priced side bacon and a little over 10 per cent said they had customarily bought back bacon.

The quantities per adult-equivalent unit of Grade A Lean bacon bought by those who had been accustomed to buying the two types of side bacon were compared. In each group, with one exception in each city, of all buyers reporting by mail or telephone, those who had formerly bought better quality side bacon bought more Grade A Lean bacon per unit than did those who had formerly bought the cheaper brands.

Continued Buying of Grade A Lean Bacon.—The most important information derived from the questionnaire was whether or not those who had once bought Grade A Lean bacon would continue to buy it.

The first questionnaire could only ask whether the respondent intended to make Grade A Lean bacon the next purchase of side bacon. In Montreal 74 per cent of those replying to the first questionnaire to whom Grade A Lean bacon was available, replied in the affirmative.

The second questionnaire, sent to all whose names and addresses had been obtained, asked whether the respondents had bought Grade A Lean bacon or other side bacon during any of three weeks, beginning about a month after the demonstration. Of the 348 who reported having bought side bacon at a store selling Grade A Lean bacon, in the three weeks, 43 per cent had, in answer to the previous questionnaire, stated that they intended to buy Grade A Lean bacon when they next bought side bacon; 22 per cent had stated that they did not intend to do so; and 35 per cent had not answered the question. Actually, in the three weeks, 47 per cent bought only Grade A Lean, 28 per cent bought Grade A Lean and other side bacon, and 25 per cent bought only side bacon other than Grade A Lean.

In Edmonton 84 per cent, and in Toronto 70 per cent of those to whom Grade A Lean bacon was available and who stated by mail whether or not they intended to buy Grade A Lean bacon when they next bought side bacon replied in the affirmative. In actual fact, the proportions of those replying by mail to the last two questionnaires who reported having bought Grade A Lean bacon averaged 85 per cent in Edmonton and 83 per cent in Toronto.

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[1] From all mail and telephone data combined, those received by telephone representing all not received by mail.

The combination of mail and telephone replies for the last two periods in Edmonton and Toronto indicated that in each city about half of those who had given their names and addresses when buying Grade A Lean bacon during the demonstration week were, a month (in Toronto) or two (in Edmonton) later, buying only that kind of bacon (Table 2). About 20 per cent were buying both Grade A Lean and other side bacon.

Reasons for not Buying Grade A Lean Bacon.—Of the 179 respondents to the second Montreal questionnaire who shopped at the store selling Grade A Lean bacon and bought side bacon, but not Grade A Lean, nearly two-thirds said they did so because the other bacon looked as lean. Almost as many felt that the price of Grade A Lean bacon was too high. Other reasons given were: other bacon was "liked" better, by 12 per cent; flavor of Grade A Lean bacon was not liked, by nine per cent; Grade A Lean bacon was not attractive, by eight per cent; thickness or width of Grade A Lean bacon was not liked, by eight per cent; fatter bacon was wanted, by five per cent. Some of the qualities not liked, such as flavor and thickness, were of course characteristics not necessarily associated with high lean content.

Table 2.—Proportion Grade A Lean of Side Bacon Purchased[a], Edmonton and Toronto, Last Two Questionnaire Periods[b], 1957

Grade A Lean of side bacon purchased	Edmonton		Toronto	
	Two weeks ending			
	Jan. 26	Feb. 9	March 2	March 16
—per cent—	— per cent—			
0	32.0	33.7	35.9	32.8
1–49	5.8	8.1	6.8	5.6
50–99	15.1	13.4	10.4	12.2
100	**47.1**	**44.8**	**46.9**	**49.4**
	100.0	100.0	100.0	100.0
Number of households	171	161	149	116

(a) By those to whom Grade A Lean bacon was available.
(b) Mail and telephone data combined, the latter weighted to represent replies from all not replying by mail.

Replies to all Edmonton questionnaires as to reasons for not buying Grade A Lean bacon were combined, those received by telephone representing all not received by mail; replies from Toronto were treated similarly. The proportions of those not buying Grade A Lean bacon giving each of the main reasons for not doing so were almost equal in the two cities (Table 3). The principal reason, stated by about 38 per cent in each city, of those not buying Grade A Lean bacon (or by about 12 per cent of all respondents who shopped at the stores selling it), was that its price was too high. About one-fourth (eight per cent)[1] said that it was no better than other bacon, or too fat, and about 15 (five per cent) said that it was not liked or that it had made so little impression that it was not thought of for the next purchase.

On the whole, proportions stating reasons for not buying Grade A Lean bacon of those who had usually bought high-priced side bacon and of those who had usually bought low-priced side bacon were quite similar in Edmonton and

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[1] Percentages in brackets are of total buying bacon to whom Grade A Lean bacon was available.

Toronto (Table 4). However, price appeared to influence former buyers of low-priced bacon more strongly in Edmonton than in Toronto.

Changes in Purchases after Introduction of Grade A Lean Bacon.—The Edmonton and Toronto housewives were asked whether there had been any changes in their purchases of side bacon since Grade A Lean bacon became available to them. At no date, omitting the periods including demonstrations of the Grade A Lean bacon, did more than 25 per cent say that any change had followed the introduction of Grade A Lean bacon.

However, increases in the use of side bacon, following the introduction of Grade A Lean, were reported much more frequently than decreases. Consequently, if the availability of Grade A Lean bacon had any effect on the total quantity of side bacon used, it is somewhat more likely that this effect was a small increase rather than a decrease.

Each group, classified according to the kind of bacon previously bought, was examined as to change in quantity of all side bacon bought after the introduction of Grade A Lean bacon. In both Edmonton and Toronto a larger

Table 3.—Proportions of Respondent Not Buying Grade A Lean Bacon for Certain Reasons, and Quantity [a] of Side Bacon Purchased per Adult-Equivalent Unit[b], Edmonton, 1956-1957 and Toronto, 1957[c]

Reason for not buying Grade A Lean bacon	Proportion stating reason:		Side bacon purchased	Proportion stating reason:		Side bacon purchased
	of all reporting	of those not buying Grade A Lean bacon		of all reporting	of those not buying Grade A Lean bacon	
	—per cent—		pounds per unit per week	—per cent—		pounds per unit per week
Price of Grade A Lean bacon too high...........	11	36	0.34	13	39	0.29
Grade A Lean bacon no better or too fat..........	7	23	0.30	8	24	0.30
Grade A Lean bacon not liked or not particularly wanted..................	5	16	—	5	14	—
Flavor or cured of Grade A bacon not liked..........	4	13	—	5	15	0.24
Back bacon preferred......	3	9	—	3	9	—
Packaging, slicing or other physical properties of Grade A Lean bacon not liked....................	2	6	—	2	7	—
Grade A Lean bacon too lean or texture unsatisfactory.....................	2	8	—	2	6	—
Bacon bought through food plan or wholesale........	1	3	—	1	2	—
Unsliced bacon preferred...	1	3	—	0	1	—
Number of households.....	727	192	—	525	142	—

(a) Stated only if based on at least ten reports by mail and ten reports by telephone.
(b) On the basis of adult requirements of meat and fish.
(c) Mail and telephone data combined, the latter weighted to represent replies from all not replying by mail.

proportion, about 18 per cent, of those who had previously bought back than of those who had bought side bacon reported buying more side bacon than formerly[1]. Proportions stating that they were buying more side bacon were somewhat higher among those who had previously bought high-priced than among those who had bought low-priced side bacon.

Purchases of Grade A Lean Bacon Related to Those of all Side Bacon.—Some evidence that the buyers of smaller quantities of side bacon were most likely to buy Grade A Lean bacon was obtained from the replies to questionnaires in Montreal. More than 80 per cent of those who stated that they had bought only one and a half pounds or less of side bacon in the preceding four weeks said that they intended to continue buying Grade A Lean bacon, compared with the 70 per cent intending to do so of those who had bought more than one and a half pounds in four weeks.

In Edmonton and Toronto those who bought both Grade A Lean and other side bacon in the two-week reporting period purchased more side bacon per unit than did either those who bought no Grade A Lean bacon or those who bought only Grade A Lean bacon (Table 5). In most reporting groups in each city more side bacon was bought per unit by those who did not buy any Grade A Lean bacon although it was available to them, than by those who bought only that kind.

Table 4.—Comparison of Proportions Not Buying Grade A Lean Bacon for Certain Reasons of Those Not Buying Grade A Lean Bacon Who Customarily Bought High-Priced and Low-Priced Side Bacon Edmonton 1956-1957 and Toronto 1957[a]

Reason for not buying Grade A Lean bacon	Edmonton		Toronto	
	Prices usually paid			
	High	Low	High	Low
	—per cent—			
Price of Grade A Lean bacon too high	25	70	27	57
Grade A Lean bacon no better or too fat	28	14	27	20
Grade A Lean bacon not liked or not particularly wanted	21	10	16	15
Flavor or cured of Grade A Lean bacon not liked	21	6	19	11
Back bacon preferred	3	0	2	3
Packaging, slicing or other physical properties of Grade A Lean not liked	7	7	11	3
Grade A Lean bacon too lean or texture unsatisfactory	9	7	6	7
Bacon bought through food plan or wholesale	4	0	2	0
Unsliced bacon preferred	0	1	4	0
Number of households	79	50	72	44

(a) Mail and telephone data combined, the latter weighted to represent replies from all not replying by mail.

Family Composition, Edmonton[2].—Households reporting were classified on the basis of family composition as follows: 1, all adults, 2, adults and children 11 to 16 years of age; 3, adults and children 6 to 10 years of age; 4, adults and children 5 years of age and under; 5, others.

The number of adult-equivalent units[3] per household varied widely from

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[1] All mail and telephone data combined.

[2] With the exception noted, figures cited in this section are those of the two two-week periods, during which mail and telephone data were combined, ending January 26 and February 9.

[3] On the basis of requirements of meat and fish.

Table 5.—Purchases[a] per Adult-Equivalent Unit[b] of Side Bacon by Reporting Group and Proportion Grade A Lean of Side Bacon Bought[c] Edmonton 1956-1957 and Toronto 1957

Two-weeks ending	Edmonton Grade A Lean of side —per cent— 0	 1–99	 100	Two-weeks ending	Toronto Grade A Lean of side —per cent— 0	 1–99	 100
	—pounds per unit per week—				—pounds per unit per week—		
Dec. 17-19	0.23	0.36	0.27	Feb. 16	—	0.35	0.22
Jan. 12	0.41	0.44	0.29	Feb. 23-27	0.27	—	0.22
Jan. 22-25	0.30	—	0.33	Mar. 2	—	0.43	0.34
Jan. 26	0.29	0.42	0.32	Mar. 9-15	0.27	—	0.18
Jan. 29-31	0.36	—	0.31	Mar. 16	0.30	0.28	0.20
Feb. 5-8	0.31	—	0.29	Mar. 19-25	0.25	—	0.27
Feb. 9	0.35	0.39	0.30	Mar. 29-Apr. 1	—	—	—
Feb. 11-14	0.34	—	0.28	Mar. 2[d]	—	—	0.28
Feb. 27-Mar. 4	0.35	—	0.28	Mar. 16	0.28	—	0.19
Jan. 26[d]	0.32	—	0.32	—	—	—	—
Feb. 9[d]	0.33	—	0.29	—	—	—	—

(a) Stated only if based on at least ten reports, and where mail and telephone reports were combined, on at least ten reports by mail and ten reports by telephone.
(b) On the basis of adult requirements of meat and fish.
(c) By those of whom Grade A Lean bacon was available.
(d) Mail and telephone data combined, the latter weighted to represent replies from all not replying by mail.

group to group, depending on both the number and age of the members (Table 6).

Of the five family composition groups thus set up one, that with children in more than one age group, had a lower rate of bacon purchases than the others. This difference consisted of lower purchases of both back and Grade A Lean bacon. As the number of adult-equivalent units per family in this group was considerably greater than in any of the others it is probable that the difference in bacon consumption was primarily a result of a difference in family size.

Table 6.—Purchases[a] of Bacon per Adult-Equivalent Unit[b] by Family Composition Group Edmonton, Periods Ending January 26 and February 9, 1957

	Family composition group Without Children[c]	 All children, 11–16 years	 All children, 6–10 years	 All children, 5 years and under	 Children in more than one age group
	—pounds per unit per week—				
Bacon purchased					
Grade A Lean	0.14	0.11	0.13	0.15	0.10
Other side	0.15	0.18	0.15	0.18	0.16
Back	0.05	0.04	0.03	0.03	0.02
Total	0.34	0.33	0.31	0.36	0.28
			—number—		
Units per household	2.48	3.29	3.18	2.56	3.72
Households	160	52	47	66	127

(a) Mail and telephone data combined, the latter weighted to represent replies from all not replying by mail.
(b) Based on requirements of meat and fish.
(c) All persons over age 16 are considered adults.

The group with all children ages 11 to 16 also used less Grade A Lean bacon per adult-equivalent unit than some of the other family composition groups. As its purchases of other brands of side bacon were relatively high there is some indication that the higher price of Grade A Lean bacon influenced this group more than the family composition groups with younger children or no children.

A larger proportion of the all-adult families than of those in other family composition groups purchased some Grade A Lean bacon during the reporting period. This proportion was almost 75 per cent of those who shopped at stores where Grade A Lean bacon was available as compared with just over 60 per cent in the groups with children ranging from six to ten years of age and with children of various ages.

One half of the families with young children bought no side bacon except Grade A Lean. The proportion buying only Grade A Lean of the other groups ranged down to 40 per cent.

Price was predominant among the reasons stated for not buying Grade A Lean bacon by the families with children ages six to ten and various ages; 50 and 62 per cent, respectively, of those in these groups stating reasons, mentioned it. Only 24 to 30 per cent of those in the other groups cited that reason. Grade A Lean bacon was considered to be too fat or no better than other bacon by from 15 to 33 per cent of the various groups. About 20 per cent of the families containing adults only stated that they preferred to buy back bacon.

In answer to the question as to whether the availability of Grade A Lean bacon had affected the quantity of side bacon bought, only nine per cent of the replies were in the affirmative from the all-adult and large-family (children of various ages) groups but 20 per cent of the group containing the oldest children said some change, usually an increase in purchase, had taken place as a result of their using Grade A Lean. About 17 per cent of the families with children six to ten years of age also said they were using more side bacon since Grade A Lean had become available.

High Income Area, Edmonton.—The reports of those whose addresses were in the area adjacent to the University in Edmonton were segregated. According to the 1951 census data that area was well above the city average in rental rates and male earnings. The size of household, in terms of adult-equivalent units, corresponded to the average for the city.

Figures obtained from the University area and from the whole survey by weighting mail and telephone reports of the two periods ending January 26 and February 9 were compared (Table 7).

Purchase rates of side and back bacon were almost equal in that area to the average purchase rates among all the survey households, but residents of the University area bought almost half as much more Grade A Lean bacon per unit than the average bought by all the respondents.

The University area differed somewhat from the city as a whole in the importance of different reasons given for not buying Grade A Lean bacon. A larger proportion of the people of the University area gave more than one reason and thus the proportion from that area giving each of a few reasons was higher than for the whole city. The chief reason offered by those of the University area, as by all respondents, was the high price of Grade A Lean bacon, but the proportion giving that reason was larger in the University area. A larger proportion in the University area also said that Grade A Lean bacon was no better than other side bacon. Residents of that area were much more critical of the physical properties of the bacon, such as thickness of slice and method of packaging, than were respondents as a whole. On the other hand, smaller proportions of the University area group than of the participants

Table 7.—Number of Adult-Equivalent Units[a] per Household and Purchases per Unit of Grade A Lean of Side and of Total Bacon in a High Income Area, Compared with Corresponding Data for the Whole Survey, Two Periods[b] Ending January 26 and February 9, Edmonton, 1957

	High income area	Edmonton
	—number—	
Units per household	3.08	3.03
	—pounds per unit per week—	
Bacon purchased		
Grade A Lean	0.12	0.12
Side	0.26	0.30
Total	0.30	0.33
	—number—	
Number of households	86	457

(a) On the basis of meat and fish requirements.
(b) Mail and telephone data combined, the latter weighted to represent replies from all not replying by mail.

in the whole survey said that Grade A Lean bacon "was not liked" or implied that it had made no impression. On the whole, however, shoppers of the University area were more critical of Grade A Lean bacon than were others.

Conclusions.—As previously reported[1], sales of Grade A Lean bacon constituted a larger proportion of the bacon sold in the test stores in Edmonton than in Montreal or Toronto, both during and after the demonstration. The much higher proportion in Edmonton, during the demonstration week, indicates that a larger proportion of the shoppers tried it in that city. Reports by participants in the survey from Edmonton and Toronto also indicate that purchases per adult-equivalent unit were also higher in the former city in the last two questionnaire periods.

Replies to other questions displayed great similarity in the reception of Grade A Lean bacon in the two cities. The reports for the third and fourth periods in each city showed a substantial proportion of the initial purchasers to be continuing to buy it. The reason given by those who were not doing so were about equally important in each city. In both cities only a small proportion, averaging ten per cent of the respondents in the later periods, said they were buying more side bacon since the introduction of Grade A Lean. In both cities also, those who used other side as well as Grade A Lean bacon bought side bacon in greater quantity per unit than did those buying only Grade A Lean.

---

[1] Drayton, L. E. "Sales Tests with Graded Side Bacon", *The Economic Annalist*' October, 1957.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Yearbook of International Trade Statistics, 1956. Two volumes. Prepared by the Statistical Office of the United Nations, Department of Economic and Social Affairs. New York, 1957. pp. 629 and 155.

This seventh issue of the U.N. *Yearbook* of International Trade Statistics is divided into two volumes. The first volume contains basic summary tables on: "World trade by regions and countries; World exports by provenance and destination; World export quantum and price indices, by regions; and Indices by commodity classes." Pages 31-629 include detailed statistical data for 115 individual countries.

The second volume is designed primarily for people interested in the broader economic aspects of external trade, which is "analyzed simultaneously by countries of provenance, by countries of destination and by seven large commodity classes".

Economic Bulletin for Europe. Prepared by the Research and Planning Division, Economic Commission for Europe. Vol. 9, No. 3. Geneva, November 1957. pp. 75.

This issue of the *Economic Bulletin* is organized into three sections dealing with "Current Economic Developments in Europe; The Polish Economy since 1950; and Regional Economic Policy in the Soviet Union; The Case of Central Asia."

OTHER PUBLICATIONS

The Economics of Communist Eastern Europe.—Spulber, Nicolas. The Technology Press, Massachusetts Institute of Technology and John Wiley & Sons, Inc., New York. 1957. pp. xxviii + 525.

One is a series of studies sponsored by the Center for International Studies. Dr. Spulber analyzes the process of "sovietization" and describes the structural changes in the economies of Czechoslovakia, Poland, Hungary, Romania, Bulgaria and Yugoslavia.

Games and Decisions: Introduction and Critical Survey. Luce, Duncan R. and Howard Raiffa. John Wiley & Sons, Inc. New York. 1957. pp xix † 509.

Games and Decisions offers a survey of the central ideas and results of game theory and related decision-making models. This survey, to quote from the Preface, "should be . . . of interest . . . for a wide group of scholars: economists concerned with economic theory, political scientists and sociologists having a methodological bent or a theoretical concern with conflict of interest, experimental psychologists studying decisions making, management scientists interested in theories of 'rational' choice and organization, philosophers intrigued with the axiomatization of portions of human behavior, statisticians and other professionally practicing decision markers, and finally mathematicians . . ."

Economic Models: An Exposition. Beach, E. F. John Wiley & Sons, Inc. New York. 1957. pp xi † 227.

In this book, Dr. E. F. Beach, professor of economics at McGill University, attempts to supply the "many good theorists whose knowledge of mathematics is limited and who hace difficulty in following the very active leaders in this field", with the mathematical background needed for an understanding of the developments in modern economic theory.

Farm Housing.—Beyer, Glenn H. and J. Hugh Rose. John Wiley & Sons, Inc., New York. 1957. pp. xi + 194.

A census monograph prepared for the Social Science Research Council and the Bureau of the Census of the United States Department of Commerce. The authors study the impact of the changes in our modern civilization on the American farmhouse, the differences betwen the farmhouse of today and that of a decade ago, and the future of farm housing.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

MARKETING SERVICE, ECONOMICS DIVISION
J. F. BOOTH, Chief

JUNE 1958 Vol. XXVIII No. 3

CONTENTS

Page

The Economic Situation 51
Farm Organization and Business in the Lundar-Eriksdale Area of Manitoba .... *J. G. MacKenzie* 53
Some Organization Aspects of Prairie Grain Farms on Sceptre Heavy Clay Soil, the Brown Soil Zone, Saskatchewan, 1955 *J. Zeman* 58
Farm Indebtedness and Use of Credit in Manitoba, 1957 *T. O. Riecken* 63
Some Aspects of the Apple Enterprise in Nova Scotia *V. A. Heighton* 67
Publications of the Economics Division 70
United Nations Publications 70
Other Publications 71

EDITORIAL COMMITTEE:

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Published by Authority of the Honourable Douglas S. Harkness
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Whole-sale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
			1935-39=100					1949=100		1935-39=100
1913	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	85.6
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	94.6
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	108.0
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	102.0
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	109.7
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	131.4
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	164.8
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	195.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	208.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	212.4
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	187.2
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	171.9
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	187.8
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	196.3
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	199.6
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	211.5
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	226.5
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	233.0
1953	220.7	221.6	179.4	263.8	250.4	234.8	207.4	115.5	112.6	248.4
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	244.6
1955	218.9	209.7	174.4	245.1	232.7	238.3	204.6	116.4	112.1	265.8
1956	225.6	210.2	173.5	246.9	231.0	247.6	208.8	118.1	113.4	284.4
1957	....	....	....	....	....	....	....	....	....	....
1957										
July	228.2	212.7	155.1	270.2	229.8	....	....	121.9	118.2	285.2
August	227.6	212.6	153.8	271.3	230.3	257.6	209.7	122.6	120.2	283.5
Sept	226.7	208.5	153.2	263.8	228.3	....	....	123.3	121.9	282.0
Oct	224.8	200.7	152.8	248.6	223.0	....	....	123.4	121.7	275.7
Nov	224.0	199.7	153.7	245.7	219.7	....	....	123.3	120.2	275.6
Dec	225.9	204.7	155.1	254.7	224.9	....	....	123.1	118.8	271.8
1958										
Jan	226.8	208.4	157.5	259.3	226.3	251.4	212.7	123.4	119.4	276.0
Feb	227.7	214.0	159.6	268.4	231.5	....	....	123.7	119.9	279.4
Mar	228.1	220.6	168.3	272.9	237.1	....	....	124.3	121.3	275.9
April	227.9	222.7	165.5	279.9	240.7	....	....	125.2	123.4	....
May	....	....	....	....	....	....	....	....	....	....
June	....	....	....	....	....	....	....	....	....	....

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1955—July 1956 include final barley and oats payments announced November 15 and 29, 1956.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Prices.—Canada's composite price index (1935-39=100) of commodities and services used by farmers declined to 236.9 in January 1958 from 241.8 in August 1957 but rose from the January 1957 level of 232.5. The composite index, exclusive of farm family living, declined to 251.4 in January 1958 from 259.0 in August but rose from the 1957 figure of 248.4.

The index of farm prices of agricultural products (1935-39=100) continued to move up, rising to 237.0 in March 1958 from 231.5 in February and 229.8 in March 1957. The substantial rise in the index between January and February is largely attributable to higher prices for livestock, poultry, eggs and potatoes.

The consumer price index advanced to a new high of 125.2 in April from 124.3 in March. A continued sharp rise in the prices of fresh fruit and vegetables, reflecting poor crop conditions in the United States, accounted for over half the increase in the total index and the remainder was largely attributable to higher prices for beef and for health care items.

The food index rose to 123.4 from 121.3; fresh fruit and vegetables, particularly potatoes and oranges, accounted for the major part of the upward movement. Increases in beef prices averaged over two cents per pound and higher prices were also recorded for fresh pork, eggs and bread. Price declines were recorded for sugar, bananas, coffee and ham.

Exports.—Exports of Canadian goods totaled $1,071 million in the first quarter of 1958 and foreign produce exported from Canada was valued at $20.8 million. The domestic export total was 2.4 per cent lower than the record value of $1,097.2 million in the corresponding period of 1957 but much higher than first-quarter exports in any other year. The small decline resulted almost equally from lower export prices and some decline in the quantity of goods shipped abroad. On a seasonally adjusted basis, exports in the first quarter declined at about the same rate as in the fourth quarter of 1957.

The United States and the United Kingdom took 60 and 15 per cent, respectively, of the exports in the first quarter of 1958, about the same proportions as in the first quarter of 1957. The share of exports to other Commonwealth countries rose from almost five per cent to seven per cent, chiefly because of large Canadian-financed deliveries of wheat to India. Europe, Latin America, and other countries all took smaller shares of Canadian exports than in the first quarter of 1957.

Export statistics for March 1, 1958 show some contrasts with the aggregate figures for the first quarter. Both the value, $368.8 million, and the volume of exports were higher than in March 1957 and any other previous March. Exports to the United Kingdom and non-Commonwealth countries in Asia were also higher than in March 1957; otherwise, the pattern of trade was generally similar to that of the first quarter.

Among the principal commodities, there were marked increases in the first three months of the year in exports of wheat, cattle, farm machinery and uranium ores, and more moderate increases in wheat flour, fish, beef, iron ore, pig ingots, blooms and billets, passenger cars and aircraft. Seeds, tobacco, wood pulp, aluminum, copper, zinc, asbestos, petroleum, fertilizers and used ships declined considerably and planks and boards, pulpwood, newsprint paper, lead and nickel less heavily. In contrast to the quarterly trend exports of fish and planks and boards increased in March 1958 and those of rolling-mill products declined.

Exports to the United States in the first three months of 1958 totaled $637.8 million, about one per cent less than in the same period of 1957. Increases in cattle, beef, some non-ferrous metals, and whisky exports were insufficient to compensate for declines among forest products and non-metallic minerals such as petroleum and asbestos.

A decrease in sales of soybeans, flaxseed, tobacco and non-ferrous metals to the United Kingdom more than offset increases in wheat, forest products, non-metallic minerals and chemical products, and domestic exports to that country dropped to $156.6 million or 2.4 per cent below the comparable total for 1957.

Exports to other Commonwealth countries rose to $74.5 million in the first quarter of 1958 from $52.3 million in the first quarter of 1957. The increase was largely due to a very marked rise in shipments to India which rose almost fourfold to $23.7 million. Shipments to other leading countries declined, except those to the Union of South Africa which increased markedly to $14.9 million, partly because of increased automobile sales.

Compared with a total of $129.6 million for the first quarter of 1957, exports to Europe in the first quarter of 1958 totaled $115 million. The decline was spread among the leading European countries and exports to the Federal Republic of Germany, France, Italy, Belgium and Luxembourg and Denmark all decreased. Shipments to the Netherlands and the U.S.S.R. both increased because of larger wheat exports.

The value of Canadian goods exported to Latin America dropped to $45.5 million from $55.3 million from the first quarter of 1957 to that of 1958. Exports to all other countries, as a group, declined to $37.9 million from $50.9 million.

Credit.—The volume of consumer credit outstanding on the books of sales finance companies declined to $746.5 million in March 1958 from $752.5 million a month earlier but rose from the $736.5 million total at the end of March 1957.

Consumer balances outstanding on the books of small loan companies and licensed money-lenders increased to $363.3 million at the end of March from $359.1 million a month earlier and $347.7 million a year earlier.

Dairy Products.—Milk production in March 1958 is estimated at 1,159 million pounds, a record for that month and about 13 per cent more than in March 1957. The January-March output is estimated at 3,069 million pounds, over ten per cent more than in the first quarter of 1957.

The March and the January-March output of creamery butter, cheddar cheese, ice cream and concentrated milk products was greater in 1958 than in 1957. January-March totals, with 1957 figures in millions within brackets, were as follows: creamery butter, 37.7 million pounds (29); cheddar cheese, 7.4 million pounds (7.1); ice cream, 5.9 million gallons (5.7); and concentrated milk products, 85 million pounds (68.4). March totals were as follows: creamery butter, 15 million pounds (11.2); cheddar cheese, 3.4 million pounds (2.8); ice cream, 2.3 million gallons (2.2); and concentrated milk products, 35.7 million pounds (27.6).

Production of process cheese in March 1958 increased to 5.4 million pounds from 4.7 million in February and 4.2 million pounds in March 1957. The January-March output climbed to 13.8 million pounds in 1958 from 11.1 million in 1957. Stocks held by manufacturers at the end of March 1958 amounted to 2.6 million pounds compared with 2.3 million at the end of February and 1.9 million at the end of March 1957.

Cold storage holdings of creamery butter were smaller at April 1, 1958 than a year before but holdings of cheddar cheese, evaporated whole milk and skim milk powder were larger. April 1 holdings, with figures for 1957 in brackets, were as follows: creamery butter, 37 million pounds (44); cheddar cheese, 40.4 million pounds (28.8); evaporated whole milk, 22.1 million pounds (12.3); and skim milk powder, 38.8 million pounds (3.3).

Margarine.—Production of margarine in March 1958 rose 12.6 million pounds from 11.4 million a year earlier, boosting the January-March output to 37.9

million pounds from 35.4 million in the first quarter of 1957. Stocks held by manufacturers, wholesalers and other warehouses totaled 4.6 million pounds on April 1, 1958 compared with 3.9 million on March 1 and 4.8 million pounds on April 1, 1957.

FARM ORGANIZATION AND BUSINESS IN THE LUNDAR-ERIKSDALE AREA OF MANITOBA

J. G. MacKenzie

The Lundar-Eriksdale area of Manitoba lies immediately east of Lake Manitoba and borders on the northern extremity of agricultural land in this part of the Province. The climate, however, is favorable for production of the common forage and grain crops. Topography is flat to gently undulating. Soils have developed on high-lime parent material and consist of much stony moraine and drift material pushed up by the waters of Lake Agassiz. Land lying along the Lake is low and best suited for pasture and hay production; back from the Lake, excessive stoniness, sloughs, and poor drainage make much of the land unsuited for cultivation. Only small, local sections have soils that may be used for extensive grain production. Since the beginning the agricultural economy of the area has been centered largely on the beef cattle and dairy enterprises.

Information on current farm organization, income and expenditure patterns was obtained in a study conducted by the Economics Division. In this study, 58 randomly selected farms were visited in the rural municipalities of St. Laurent, Coldwell and Eriksdale. The time period covered was from "after harvest" 1956 to "after harvest" 1957. Such farm organizations as whole-milk shippers, fur farms or part-time farms were not considered to be typical, for purposes of this study, and were therefore excluded from the sample. Because the emphasis in farm organization is placed on cattle production and dairy products, the farms visited were grouped according to size of cattle enterprise for the analysis of variations in input-output relationships resulting from size of business.

Land Use.—The total assessed acreage and the amount of improved land per farm, according to size of cattle enterprise, are described in Table 1. Farms with few cattle generally had fewer acres than farms with larger herds but it would seem that the size of the cattle enterprise is not closely related to the total assessed acreage. The farms with small cattle enterprises relied more on grain as a source of income and had about 15 per cent of the total acreage in improved land; for all farms the improved land averaged only nine per cent of the total acreage. There was no improved land on over one-fifth of all farms visited.

Table 1.—Utilization of Cropland According to Size of Cattle Enterprise, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1957

—	Head of cattle			All farms
	15–34	35–49	50	
	—average acres per farm—			
Number of farms	22	21	15	58
Total cultivated acres	86	44	60	64
Total assessed acres	582	843	807	735
	—average per cent of improved land per farm—			
Common grain crops	50	39	40	44
Legumes, grasses and improved pasture	8	27	17	15
Summerfallow	22	14	15	19
Idle	20	20	28	22
Total	**100**	**100**	**100**	**100**

Table 2.—Livestock Numbers According to Size of Cattle Enterprise, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1957

Livestock	Head of cattle			All farms
	15–34	35–49	50	
	—average number per farm—			
Horses	2.1	3.1	3.8	2.9
Cows	10.8	16.1	24.6	16.3
Other cattle	12.9	22.8	44.5	24.6
Sows	.8	.4	.5	.6
Other hogs	5.7	1.8	1.7	3.2
Sheep	1.3	1.5	7.6	3.0
Poultry	46.0	18.0	27.0	33.0

Oats is the major grain crop in this area. Wheat and barley, although grown on some farms, are rather unimportant. For all farms, grain crops made up 44 per cent of the total cropland acreage; legumes, grasses and improved pasture 15 per cent; fallow land 19 per cent; and idle land 22 per cent.

The improved land designated as "idle" is land which has been cultivated at one time but has not been seeded to any crop for several years. This land has now gone back to native grasses or a mixture of tame and native grasses. It is usually pastured or may provide hay for winter feeding of cattle. Several reasons may be given for this land being idle. Frequently the soil would not produce satisfactory crops after the native fertility was depleted; much of this land is stony and possibly was never suitable for cultivation; in recent years the ground water table has risen and some periodic flooding has occurred; and in some cases the farms have been temporarily unoccupied and the cultivated land once let go back to sod has not been rebroken.

Crown and municipally-owned land make up about 40 per cent of the total land area in these three municipalities. Although much of this land is unoccupied, a considerable amount is utilized for agricultural purposes. Owned land made up 56 per cent and rented and leased land 44 per cent of the total acreage of the farms visited. The same general tenure pattern was found in all farm size groups.

Livestock.—The common practice is to keep a team of horses for choring, although a few operators reported the use of horses for field tillage work. No horses were reported on four farms and 21 farms had four or more horses. Numbers of various kinds of livestock per farm, according to the size of the cattle enterprise, are given in Table 2.

Farms selected for this study had cattle enterprises ranging in size from 15 to 118 head. Most of the cattle are of the beef type but farmers also keep many dual purpose and dairy cattle. Sheep are more numerous in this area than in other parts of Manitoba but are relatively unimportant in the over-all organization of these farms. Eleven farm operators reported having sheep; the average size of flock was about 20, including ewes, lambs, and rams. Hogs are also of minor importance, although some were kept on over one-half of all farms visited, or six sows per ten farms. Poultry was kept on most farms, although few operators had large flocks.

Labor requirements varied directly with the size of the cattle enterprise. This input ranged from an average of 1.4 man-equivalents on farms with less than 35 head of cattle to 1.6 man-equivalents on farms with more than 49 head of cattle (Table 3). For all farms an average of 1.5 man-equivalents of labor were used. Hired labor amounted to 11 per cent of the total labor force on the large cattle enterprise farms but was not too important on farms with small herds.

Table 3.—Hired Labor, Unpaid Family Labor and Operator's Labor According to Size of Cattle Enterprise, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1956-57

—	Head of cattle			All farms
	15–34	35–49	50	
Total Man-equivalents	1.41	1.52	1.61	1.50
		—average per cent per farm—		
Operator	70	66	62	66
Unpaid family	24	31	27	27
Hired	6	3	11	7
Total	**100**	**100**	**100**	**100**

Capital Investment.—The rather low productivity of the land, small cultivated acreages, and low requirements for machinery and equipment are reflected in the low capital investment per farm, the total investment averaging $11,439 for all farms (Table 4).

The investment in real estate, including buildings and other farm improvements, averaged $7.18 per acre. This low valuation reflects the relatively poor demand for farm land in this area compared with other agricultural areas in Manitoba where land still sells at prices ranging between $50 and $75 per acre.

Machinery investment is also low. Nearly all farms had one tractor and several farms had two. These tractors, however, were usually fairly old; their average value amounted to about $500 per machine. Combines and swathers were reported on four of the 58 farms; cars on 27, trucks on 32, and threshing machines on 11 farms. Haying equipment was common to all farms; power mowers were reported on 51 farms and hay sweeps and stackers on 54.

Cattle investment averaged $3,371, for all farms visited, which was nearly 90 per cent of the total investment in livestock. Investment in horses averaged $253 per farm, hogs $111, sheep $31, and poultry $41 per farm.

Receipts.—Total farm receipts averaged $2,808 per farm and ranged from an average of $2,666 on farms with less than 35 head of cattle to $3,563 on farms with more than 49 head (Table 5).

Income from sale of livestock was the most important single item and made up about 40 per cent of the total farm receipts. Income from cattle averaged $956 per farm, hogs $140, sheep $12, and poultry $12 per farm. Income from livestock products was next in importance and made up about 35 per cent of

Table 4.—Capital Investment According to Size of Cattle Enterprise, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1956-57

Capital item	Head of cattle			All farms
	15–34	35–49	50	
		—average dollars per farm—		
Land owned	5,059	3,266	6,376	4,750
Rented and leased	445	679	447	530
Sub-total	**5,504**	**3,945**	**6,823**	**5,280**
Machinery—Special	1,360	786	1,245	1,122
General	1,181	1,028	1,584	1,230
Sub-total	**2,541**	**1,814**	**2,829**	**2,352**
Livestock:				
Horses	188	273	319	253
Cattle	2,067	3,006	5,794	3,371
Hogs	176	63	83	111
Sheep	12	14	83	31
Poultry	60	23	38	41
Sub-total	**2,503**	**3,379**	**6,317**	**3,807**
Total investment	**10,548**	**9,138**	**15,969**	**11,439**

the total receipts. Sale of cream was the largest item in this group and averaged $810 per farm; income from eggs averaged $44 per farm.

The group of farms with 15-34 head of cattle also had the largest acreage in crops and on these farms the value of grain available for sale averaged $473 per farm. On farms with larger cattle herds the value of surplus grain averaged less than $75 per farm. For all farms, the receipts from this source averaged $207 per farm. Some hay was also available for sale in all farm size groups. Grain and hay, however, would generally be carried over as a feed reserve into the following year or sold to other farm operators within the area.

Expenses.—Cash expenses averaged $1,486 per farm, and ranged from an average of $1,439 on farms with less than 35 head of cattle to $1,837 on farms with more than 49 head (Table 6).

Livestock enterprise costs represented about one-third of the total cash costs; these costs were slightly above average on farms with large cattle herds. Feed and cattle purchases were the largest single expense items within this group. Real estate expenses amounted to about 20 per cent of the total cash expenses for all groups of farms. Crop expenses were relatively small and were greatest on farms where there were fewer cattle and greater emphasis was placed on grain production. Purchase of commercial fertilizers was the largest item of crop expense.

Although grain production is not an important phase of the organization of these farms, haying is a major operation and tractors are used extensively for mowing, stacking, and hauling. Machinery and equipment costs are, therefore, a relatively large item of cost; it averaged $462 per farm or 30 per cent of total cash expenses.

Labor costs averaged $99 per farm and were generally related to the size of the cattle enterprise. Custom work costs were mostly money paid out for threshing grain. Miscellaneous expenses (hydro, telephone and small hardware) averaged $71 per farm, with little variation among farm size groups.

Depreciation charges for buildings and machinery averaged about $500 per farm on farms with small or large cattle enterprises and was somewhat

Table 5.—Source of Receipts According to Size of Cattle Enterprise, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1956-57

Source	Head of cattle						All farms	
	15–34		35–49		50			
	—average dollars per farm—							
Crop								
Grain	473		26		70		207	
Hay	83		181		200		149	
Sub-total		**556**		**207**		**270**		**356**
Livestock:								
Cattle	639		861		1,553		956	
Hogs	234		71		100		140	
Other	23		22		50		30	
Sub-total		**896**		**954**		**1,703**		**1,126**
Livestock products:								
Butterfat	666		895		904		810	
Eggs	127		14		6		55	
Other	2		—		2		1	
Sub-total		**795**		**909**		**912**		**866**
Custom work		79		2		—		31
Miscellaneous [a]		4		19		—		8
Inventory increase		356		329		678		421
Total farm receipts		**2,686**		**2,420**		**3,563**		**2,808**

[a] Represents an increase in value of livestock during the year of the study.

less on farms with medium size herds. When this item is added to cash expenses, total farm expenses average almost $2,000 per farm, for all farms studied.

Returns to Farm Capital and Labor.—Returns to capital, family labor, and operators' labor and management are summarized in Table 7. They averaged $1,243 per farm and ranged from an average of $1,083 on farms with less than 35 head of cattle to $1,689 on farms with more than 49 cattle. Home consumed farm produce includes milk, eggs, and farm butchered meats which have a market value and, therefore, are income to capital and labor. Rental value of the house represents an income to the farm business for money invested in the farm home.

Income from non-farm sources represents money earned by members of the family labor force while away from the farm and without the use of farm resources, and income for non-farm investments. This income averaged $235 per farm and may be considered as additional and supplementary income.

Summary.—The soils in the Lundar-Eriksdale area are generally considered to be of low productivity and sub-marginal for grain production. Much of this area, however, is meadow land and well suited to pasture and hay production. It might, therefore, be expected that the most remunerative use of this land would be a type of farming centered on livestock production.

Several successful grain-livestock farms were noted in the analysis of the study records. On small, selected parts of this area a fairly large portion of

Table 6.—Expenditure Pattern According to Size of Cattle Enterprise, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1956-57

Expense item	Head of cattle						All farms	
	15–34		35–49		50			
	—average dollars per farm—							
Real estate:								
Taxes	169		196		217		191	
Repairs	86		60		27		62	
Insurance	23		9		23		18	
Sub-total		**278**		**265**		**267**		**271**
Crop:								
Seed purchase	28		17		6		18	
Fertilizer	57		18		22		34	
Other	17		9		17		14	
Sub-total		**102**		**44**		**45**		**66**
Livestock:								
Pasture rent, hay lease	15		40		29		27	
Feed and supplements	229		259		356		273	
Purchases	225		168		159		187	
Other	9		8		12		10	
Sub-total		**478**		**475**		**556**		**497**
Machinery and equipment:								
Fuel and oil	253		217		357		267	
Repairs, etc	181		149		280		195	
Sub-total		**434**		**366**		**637**		**462**
Labor		64		50		221		99
Custom work		10		20		34		20
Miscellaneous		73		62		77		71
Total cash expenses		**1,439**		**1,282**		**1,837**		**1,486**
Depreciation:								
Buildings	177		129		187		162	
Machinery	345		253		358		315	
Sub-total		**522**		**382**		**545**		**477**
Total farm expense		**1,961**		**1,664**		**2,382**		**1,963**

Table 7.—Returns to Farm Capital and Labor (Operator and Family) According to Size of Cattle Enterprise, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1956-57

—	Head of cattle			All farms
	15–34	35–49	50	
	—average dollars per farm—			
Total farm receipts [a]	2,666	2,420	3,563	2,808
Total farm expenses [b]	1,961	1,664	2,382	1,963
Net farm receipts	705	756	1,181	845
Value of farm perquisites	378	339	508	398
Returns to farm capital and labor	1,083	1,095	1,689	1,243
Income from non-farm sources	277	211	206	235
Income from all sources	1,360	1,306	1,895	1,478

[a] Includes landlord's share of farm production.
[b] Includes taxes on rented land.

the farms were broken and quite satisfactory grain yields obtained. Where such conditions existed considerable income was realized from grain sales. Farms with cattle herds ranging from 35 to 49 head had about the same net returns to capital and labor as the farms with smaller herds. These medium-size cattle farms generally had small cultivated acreages (Table 1) and, hence, no appreciable amount of grain for sale. Also, the cattle herd was not large enough to offset a reduced income from crops.

For the most part, the more efficient type of farm organization seemed to be a type with the emphasis on extensive cattle production. The cattle farms took better advantage of available pasture and hay land and usually purchased some grain to supplement the home grown feed. A considerable number of animals were sold for beef but cows were milked on many of the high income farms and the sale of cream greatly added to the returns from livestock.

The farm operator must adopt a type of farm organization which will maximize the net returns from the resources at his command. Considering the soil and other inherent characteristics of this area, a review of the returns to capital and labor on the farms included in this study indicates that in general the farm operator has been fairly successful in managing a type of farming well suited to the local environment.

SOME ORGANIZATION ASPECTS OF PRAIRIE GRAIN FARMS ON SCEPTRE HEAVY CLAY SOIL, THE BROWN SOIL ZONE, SASKATCHEWAN, 1955

J. Zeman

A series of bulletins on "Agricultural Statistics by Type of Farming Areas", published by the Economics Division in 1956, supplies background data on types of farming in all provinces of Canada. These data are augmented by information derived from several continuing studies in different parts of the country[1]. In Saskatchewan, one of these studies is concerned with grain farms, where wheat is predominantly grown in the prairie area of the province. A grain farm, for the purposes of this study, is defined as a farm where: a) 70 per cent or more of the gross revenue is from the sale of grains and hay, and b) the wheat acreage exceeds 40 per cent of the total crop acreage.

Considerable care was exercised in selecting a sample of farms for the study. A sample of farms obtained in a particular year is not necessarily representative of the type of farm which predominates in the survey area.

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[1] Lane, G. A. and J. G. Carson, *Agricultural Statistics by Type of Farming Areas*, Economics Division, Ottawa. April 1956. *A Graphic Presentation of Canadian Agriculture—1951 Census.* Prepared by the Economics Division in co-operation with the Census Division, Dominion Bureau of Statistics, Department of Trade and Commerce, Ottawa, 1956.

General observations, based on four years of study in different parts of the prairie area suggest that grain farms are not the predominant type of farm in areas of medium-textured and light-textured soils. In the heavy textured soils area, grain farms are quite common.

The 1955 phase of the study was carried on on farms of the Sceptre heavy clay association in the Brown soil zone. Thirty-eight townships in Rural Municipalities 168, 228, 229, 230, 231, and 261 were selected as the area from which a representative sample of farms on Sceptre heavy clay soil could be drawn. The occupancy for the total area, comprised 662 farms of all sizes. Three hundred and fifty seven were either half section; one section; or two to three sections farms. These were considered to be representative of small, medium and large farms.

A reconnaissance visit was made to each of these 357 farms to determine a basis for the selection of typical grain farms. Data were collected on: cultivated acres, livestock complement, custom work done by and for the operator, proprietorship and management arrangements, feed crop acreage, full or part time operations and age of operator.

The farms drawn for the final sample met the following requirements:

Improved area	290-320 acres for half-section farms; 590-640 acres for section farms; and 1000-1600 acres for large farms.
Livestock	not more than 10 cattle and 10 hogs for half-section farms; 15 head of each for the two larger size groups;
Machinery and equipment	a full normal complement, not doing or paying for abnormal amounts of custom work;
Management	the operators must be full-time farmers except for minor non-competing off-farm work. They must have farmed for at least two years but must not be in a semi-retirement condition. Complicated proprietorship arrangements were discarded.

This selection provided 36 small-size farms, 41 medium-size and 37 large-size farms, or a total of 114 farms from which to draw the sample of 80 farms. The selection process is described in Table 1.

Data were obtained by the two-call survey method; the first call was made just before and the second immediately after harvest. Information was collected on: land use, inventories, annual machinery use, cultural practices, yields, miscellaneous operating expenses and use of credit. An attempt was made to obtain input figures in physical terms, inasmuch as possible.

Table 1.—Distribution of Farms by Size, 80 Grain Farms, Brown Soil Zone, Saskatchewan, 1955

Size of farms by quarter sections

—	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
	—number of farms—													
Occupancy	7	153	107	124	63	73	48	41	9	16	7	7	7	662
Reconnaissance	—	153	—	124	—	—	—	41	9	16	7	7	—	357
Retained for randomization	—	36	—	41	—	—	—	—	—	37	—	—	—	114
Sample	—	17	—	26	—	—	—	—	—	37	—	—	—	80

Table 2.—Land Utilization, 80 Grain Farms, Brown Soil Zone, Saskatchewan, 1955

—	Average for 17 small farms		Average for 26 medium farms		Average for 37 large farms	
	Acres	Per cent of cropland	Acres	Per cent of cropland	Acres	Per cent of cropland
Wheat						
on fallow	88.0	29.3	223.0	36.9	472.0	37.7
on stubble	103.0	34.4	100.0	16.5	193.0	15.4
Barley	18.0	6.0	23.0	3.8	37.0	2.9
Oats	4.0	1.3	2.0	0.3	1.5	—
Flax	9.0	3.0	44.0	7.3	119.7	9.6
Rye	3.0	1.0	7.0	1.2	18.8	1.5
Crested wheat grass	2.0	0.7	—	—	—	—
Summerfallow	73.0	24.3	206.0	34.0	412.0	32.9
Total cropland	300.0	100.0	605.0	100.0	1,254.0	100.0
Farmstead and unimproved land	19.0	—	34.0	—	133.0	—
Total farm area	**319.0**	—	**639.0**	—	**1,387.0**	—

According to available information on land classification, type of farming areas, and soil classification, there are about 95 townships, with the same type of land, used for grain farming in Saskatchewan and Alberta. With an average of close to 31 farms per township, the sample would represent about 2,900 farms.

Land Use.—Sceptre heavy clay soil is one of the most productive soils in Saskatchewan[1]. Within certain limits, land use on farms with this type of soil, is fairly uniform. As indicated in Table 2, wheat was by far the most important crop. Because of difficulty in marketing wheat in 1955, other crops such as flax, durum wheat, barley, rye and oats were being grown, probably to a greater degree than usual. These crops were grown largely as cash crops rather than for feeding on the farm. No typical rotation pattern emerged between a two-year summerfallow-wheat rotation and a three-year summerfallow-wheat rotation.

Livestock.—Farms in the survey area are characterized by a low livestock population (Table 3). Of the 17 farmers on half-section farms from whom detailed information was obtained only two kept cattle and hogs. In the group of 26 farmers on section farms 12 kept cattle and eight kept hogs; these farmers had an average of five head of cattle and five hogs. Of the 37 farmers on large farms 13 kept cattle and eight kept hogs; they also had an average of five head of cattle and five hogs.

For a more representative picture of the livestock situation, figures obtained from a preliminary survey were also used, enabling us to add 36 farmers on half-section farms, 50 on section farms, and 23 farmers on large farms.

Farm Labor.—The 80 farms included in the survey were selected as grain farms. Of these 80 farms, 53 had no livestock and no winter employment. A large proportion of the farmers lived off the farm during the winter season. On the average, the operator himself worked less than 12 months a year on his farm (Table 4).

All the labor was supplied by the operator himself on 10 small farms, seven medium and one large farm and by the operator with some assistance from family members on three small farms, five medium and 10 large farms; it was supplied by the operator with some assistance from hired help on four small farms, 13 medium, and 14 large farms, and by the operator with family assistance and some hired help on one medium and 12 large farms.

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[1] Soil Survey Report No. 12.

Table 3.—Livestock on 189 Grain Farms, Brown Soil Zone, Saskatchewan, 1955 (Preliminary Survey)

—	Size of farm		
	Small	Medium	Large
	—number of farms—		
NUMBER OF CATTLE PER FARM			
None	34	38	32
1—10 head	9	26	22
11—20 head	7	8	2
21 and over	3	4	4
Total number of farms	**53**	**76**	**60**
Average per farm with cattle	13	11	15
NUMBER OF HOGS PER FARM			
None	36	54	44
1—10 head	11	20	13
11—20 head	4	1	3
21 and over	2	1	0
Total number of farms	**53**	**76**	**60**
Average per farm with hogs	10	6	5

Table 4.—Months of Labor on 80 Grain Farms, Brown Soil Zone, Saskatchewan, 1955

Type of labor	Months of Labor		
	Small	Medium	Large
Hired labor	0.2	1.0	3.4
Unpaid family labor	0.4	0.9	1.5
Operator	8.0	9.7	11.3
Total labor	**8.6**	**11.6**	**16.3**
Number of farms	17	26	37

Table 5.—Average Inventory, 80 Grain Farms, Brown Soil Zone, Saskatchewan, 1955

—	Size of farm		
	Small	Medium	Large
	—dollars—		
Land	12,555	28,333	60,400
Machinery and equipment	5,897	11,353	19,146
Buildings	1,185	1,964	3,018
Livestock	119	413	254
Total	**19,756**	**42,063**	**82,818**
Number of farms	17	26	37

The operator provided all the labor on about 23 per cent of all farms, he had family assistance on about 23 per cent, hired help on 39 per cent, and family assistance and hired help on 16 per cent of all farms. There was no unpaid family labor on 61 per cent and no hired labor on 45 per cent of the 80 farms.

Farm Capital.—A large amount of capital is generally required to start farming (Table 5). In the survey area, the price of land was quite high in

Table 6.—Average Farm Receipts, 80 Grain Farms, Brown Soil Zone, Saskatchewan, 1955

—	Size of farm		
	Small	Medium	Large
	—dollars—		
Receipts:			
Crop	7,400	14,520	31,110
Livestock sales	47	—	24
Livestock product sales	1	1	7
Custom work	—	36	13
Total	**7,448**	**14,557**	**31,154**

Table 7.—Average Expenses, 80 Grain Farms, Brown Soil Zone, Saskatchewan, 1955

Cash expenses	Size of farm		
	Small	Medium	Large
	—dollars—		
Real estate	364	646	1,263
Crop	198	458	699
Machinery and equipment	435	806	1,450
Labor	49	232	756
Custom work	62	49	nil
Livestock	2	7	4
Miscellaneous	60	112	217
Total cash	1,170	2,310	4,389
Depreciation:			
Buildings	70	113	190
Machinery	782	1,326	2,122
All expenses	2,022	3,749	6,701
Number of farms	17	26	37

1955, mainly because the soil is of superior quality for grain production.

Farms are highly mechanized and most of them use modern and heavy machinery. Combines were used on 13 small farms, 25 medium and 37 large farms; of these combines, three, 14 and 26, respectively, were self-propelled. The average machinery investment per acre of cropland was $19.66 for small farms, $18.76 for medium farms, and $15.27 for large farms.

The average building investment per acre of cropland, excluding the value of the house, was $3.95 for small farms, $3.25 for medium farms, and $2.40 for large farms. Most of the buildings were old buildings and barns were found only on 42 farms; some of the barns had been converted into granaries.

Farm Receipts.—Potential farm receipts in 1955 were derived largely from the sales of wheat which accounted for 87, 84, and 80 per cent of all crop sales on small, medium and large farms, respectively. The data provided in Table 6 assume a complete disposal of the 1955 crop after deducting normal feed and seed requirements. Information pertaining to yield and grade was obtained from the farmers. The 1954 price, per bushel, was used to determine the total value of the crop for sale.

Farm Expenses.—Capital expenses, depreciation of the farm home and board of paid labor were not included in farm expenses (Table 7).

The bulk of the real estate expenses was for taxes. About two-thirds of the machinery expenses was for fuel. Depreciation charges were calculated on the basis of replacement costs for buildings and machinery.

FARM INDEBTEDNESS AND USE OF CREDIT IN MANITOBA, 1957

T. O. RIECKEN

A survey in 1957 of 58 farms in the Lundar-Eriksdale district of the Interlake area of Manitoba showed that about 66 per cent of the farms had some debt and that indebtedness averaged $611 per farm. Another study of 52 farms of two and three quarter-sections in the Red River Valley area south of Winnipeg showed that 60 per cent of the farms had some debt; the average debt amounted to $1,806 per farm.

Information on farm debt and use of credit was collected as part of a larger study of changes in farm organization. The farms studied in each area were randomly selected from a group of commercial farms. Beginning farmers, retired or semi-retired farmers, part-time farmers and specialty type farmers were excluded from the samples. The data cover the period from "after harvest" 1956 to "after harvest" 1957. The debt reported was the debt outstanding in the fall of 1957.

The Lundar-Eriksdale district lies immediately east of the southern part of Lake Manitoba. Soils of the area have developed on high-lime parent material and consist of much stony moraine and drift material. These soils are generally of low quality and most of the land is used in its native condition for hay and grazing. However, the common cereal grain and forage crops are grown on the cultivated portions of the land. The emphasis in farm organization is on cattle production; cream sales provide almost as much income as the sale of cattle. Other livestock and cash grains are not important. The average size of the 58 farms was 735 acres, of which 64 acres were improved. There was an average of nearly 25 head of cattle per farm.

The farms in the Red River Valley area were located on the fine-textured clay soils south of Winnipeg, both east and west of the Red River. These are fertile soils, although drainage is sometimes a problem. All common cereal crops and forage as well as special crops such as sugar beets and sunflowers are grown. Grain and other crops provide most of the income. There are livestock on most farms but poor water supplies restrict livestock operations. The average size of the two and three quarter-section farms was 412 acres and 392 acres were improved. There were nearly six head of cattle per farm.

Type and Size of Loan Indebtedness.—In the Interlake area the average amount of intermediate-term (one to four years' duration) current indebtedness, or loans outstanding per farm, was greater than either long-term (more than four years) or short-term (less than one year) indebtedness, although more farmers reported short-term rather than other types of debt (Table 1). The small amount of long-term debt, usually tied to the land, reflects the relatively low productivity of the Interlake lands. On the Red River Valley farms, long-term debts were larger than other types of debt, but more farmers reported intermediate-term than other types of indebtedness. Only one-quarter of the farms reported short-term debts, which made up less than 10 per cent of all debts. On the other hand, one-third of the farms reported long-term debts, representing more than 60 per cent of all indebtedness. Some farms in both areas had more than one type of debt and also had loans of varying terms from more than one creditor.

Distribution of Loan Indebtedness and Type of Creditor.—Of the five farms reporting long-term loan indebtedness, or loans outstanding, in the Interlake area, the Canadian Farm Loan Board was the creditor for one loan, and the Veterans' Land Act for one; private individuals were the other creditors (Table 2). Intermediate-term credit was most frequently obtained from banks through the Farm Improvement Loans Act, the banks making 20 of the 24 intermediate-term loans. Just over one-half of all farms reported an average of $356 of short-term debts. The most frequently reported short-term

Table 1.—Average Value of Loans Outstanding, 38 Farms, Interlake Area and 31 Farms, Red River Valley Area, Manitoba, 1957

Type of loan	Interlake			Red River Valley		
	Farms with loans outstanding			Farms with loans outstanding		
	Number	Average per farm in sample	Per cent of total loans	Number	Average per farm in sample	Per cent of total loans
		—dollars—			—dollars—	
Long-term	5	73	12	17	1,104	61
Intermediate-term	24	354	58	19	578	32
Short-term	30	184	30	13	124	7
All farms with loans outstanding[a]	38	611	100	31	1,806	100

[a] Some farms had loans from more than one lending agency.

debt was for municipal taxes. The average of $251 for farms owing money to the municipality was for taxes for years previous to 1957, and not for current (1957) taxes. Ten farmers owed an average of $224 to local business men, mostly storekeepers, and machinery and oil agents. Of the 38 farms reporting debts of all kinds, the lowest amount reported was $85 and the highest $5,035.

In the Red River Valley area, Government of Canada agencies were the most important creditors in the long-term field, having made 11 of the 17 loans outstanding. Loans obtained through the Farm Improvement Loans Act accounted for more than one-half of the intermediate-term loans. Private individuals were the next most common creditor. In the short-term field the rural municipality was again the most common creditor. Local business men, credit unions, and private individuals were active in the short-term field, but to a smaller extent than other types of creditors. The debts reported ranged from a low of $32 to $7,900, on the 31 farms reporting indebtedness.

Table 2.—Distribution and Amount of Loans Outstanding, 38 Farms, Interlake Area and 31 Farms, Red River Valley Area, Manitoba, 1957

Term of loan	Interlake		Red River Valley	
	Farms reporting	Average per farm reporting	Farms reporting	Average per farm reporting
	—number—	—dollars—	—number—	—dollars—
Long-term loans	5	850	17	3,431
Intermediate-term				
F.I.L.A	20	701	15	1,389
Others	4	926	10	925
All intermediate-term loans[a]	24	854	19	1,631
Short-term loans				
Local businesses	10	224	3	340
Municipalities	25	251	9	398
Others	6	362	4	550
All short-term loans[a]	30	356	13	523
All loans[a]	38	933	31	3,101

[a] Some farms had loans from more than one lending agency.

Purpose of Loans.—The long-term loans in the Interlake area were arranged to buy land or farms, though one farmer reported that his loan was used also partially to purchase cattle. Of the 20 intermediate-term loans from the Farm Improvement Loans Act, eleven were wholly or partially to buy machinery, 10 wholly or partially to buy cattle, two for erecting and repairing buildings and two for the general purpose of financing or to start farming. Even in this area of limited cropland, money was borrowed more frequently to purchase machinery than for any other single purpose. Intermediate-term loans from other sources were also obtained mostly for the purchase of machinery or for general farm expenses. The type of short-term creditor fairly well indicates the purpose for which credit was obtained. Municipalities extended credit for tax arrears which, in some cases, extended over more than one year. Local businesses extended credit for farm supplies and the supplies most frequently obtained were gasoline, oil, and machinery repairs and servicing.

On the Red River Valley farms 16 long-term loans were obtained wholly or partially to buy land, three to buy machinery and pay off some debts and two, one wholly and the other in part, to build houses. Of the 26 intermediate-term loans made to 19 farmers, 18 were obtained wholly or in part to purchase machinery; combines were the machines most frequently purchased. Two loans were obtained to build houses. About one of six farms reported owing money to the municipality for taxes for years previous to 1957. The credit obtained from banks and credit unions was mostly for the general operation of the farm.

Loan Characteristics and Standing.—A general feature of the long-term loans reported outstanding in the Interlake area was their relative newness (Table 3). All the long-term loans had been granted in 1950 or more recently. There

Table 3.—Average Original Loan, Amount Outstanding, Period and Age of Loans Per Farm, According to Term of Loans, 32 Loans, Interlake Area and 45 Loans, Red River Valley Area, Manitoba, 1957

Term and creditor	Number of loans	Original amount	Amount outstanding	Age of loan	Length of fixed terms	Loans with fixed terms	Loans with indefinite terms
		—dollars—		—years—		—number—	
				—INTERLAKE AREA—			
Long-term							
Government [a]	2	3,550	1,100	6	15	2	—
Individuals	3	1,933	683	5	6	1	2
Intermediate-term							
Government [a]	20	1,553	701	2	3	20	—
Commercial [b]	4	2,540	2,380	2	2	3	1
Individual	3	1,367	1,367	3	2	1	2
				—RED RIVER VALLEY AREA—			
Long-term							
Government [a]	11	4,191	3,253	6	21	11	—
Commercial [b]	4	3,575	1,588	5	9	4	—
Individual	4	6,750	3,775	6	10	2	2
Intermediate-term							
Government [a]	15	2,286	1,389	2[c]	3	15	—
Commercial [b]	6	942	729	1	2	4	2
Individual	5	1,180	1,160	3	1	2	3

[a] Includes Canadian Farm Loan Board, Veterans' Land Act, and Farm Improvement Loans Act.

[b] Insurance and mortgage companies, banks, finance companies, and credit unions.

[c] Actually less than one year as all loans were taken out within the past 12 months.

was a tendency for loans from individuals to have no fixed period during which the loan was to be repaid. On the average, intermediate-term loans from or through a government agency had been granted for a three-year period and had already been running for almost two years at the time of the study. Eleven of the 20 Farm Improvement Loans Act loans were taken out in 1956 or 1957, four were in the third year of the loan and final payment was due, and two were overdue and had been extended or renewed by borrowings subsequent to the original loan.

In the Red River Valley the 11 long-term loans from government creditors had an average term of 21 years and had been in effect for an average of six years; the oldest loan was obtained in 1945. Commercial creditors gave loans for much shorter terms; all such loans had been granted in 1950 or more recently. Two long-term loans from private individuals had 10-year terms, and two had indefinite terms. Of the 15 intermediate-term government loans, eight were made in 1956 or 1957, four in 1954, and one in 1951 for an original term of three years. Of the six intermediate-term loans from commercial agencies, two had indefinite terms. Only a small portion of all individual intermediate-term loans had been repaid, and as some of these loans were from relatives of the borrowers they may eventually become gifts from the lender.

Farm Capital and Indebtedness.—There was a vast difference between amounts of invested capital owned by operators in the two areas, and most of it stemmed from wide variation in soil quality (Table 4). Real estate values were about six times higher and the value of machinery and equipment nearly three times higher in the Red River Valley than in the Interlake area. The value of livestock, on the other hand, was nearly four times higher in the Interlake than in the other area. Total farm capital averaged about $35,500 in the Red River Valley compared with only about $11,000 in the Interlake area.

On the average, indebtedness equalled 3.9 per cent of invested capital on Interlake farms, and 4.7 per cent on Red River Valley farms. The percentage was slightly higher for the latter farms but these farms are better equipped to pay their debts.

Summary.—Nearly two of every three of the Interlake farmers and three in five Red River Valley farms reported some indebtedness. In the Interlake area long-term debts made up only 12 per cent of total indebtedness and intermediate-term debts accounted for 58 per cent. In the Red River Valley area, long-term debts were 61 per cent of the total and short-term debts only seven per cent.

Table 4.—Average Total Owned Farm Capital and Relationship of Loans Outstanding to Total Capital Invested Per Farm, 58 Farms, Interlake Area and 52 Farms, Red River Valley Area, Manitoba, 1957

—	Interlake	Red River Valley
	—dollars per farm—	
Real estate	4,750	27,202
Machinery and equipment	2,352	7,328
Livestock	3,807	1,001
Total farm capital	**10,909**	**35,531**
Total long and intermediate-term indebtedness	**427**	**1,682**
	—per cent—	
Loans outstanding [a], as percentage of invested capital	3.9	4.7

[a] Includes only long-term and intermediate-term loans.

Credit is available from several sources. Government agencies are the most important, and private individuals the next most important source of long-term credit. Government guaranteed loans under the Farm Improvement Loans Act, accounted for 20 of the 27 intermediate-term loans in the Interlake area, or nearly 70 per cent of the outstanding intermediate-term debts. Municipalities were the most important short-term creditors. In the Red River Valley area government agencies were the most important long-term creditors, holding more than one-half the loans, and private individuals were the next most important group. Of the 26 intermediate-term loans, 15 were loans guaranteed by the Government through the Farm Improvement Loans Act.

The rate of repayment was good, on the average, except for loans from individuals. The average age of the loans is quite low and the oldest loans of any type, from any creditor, had been granted for only 12 years. Government creditors granted the longest terms and many loans from private individuals had indefinite terms.

Farm operators in the Red River Valley area had more than three times as much equity in invested capital as the Interlake area operators, reflecting primarily the difference in land quality. The average ratio of the total of long and intermediate-term indebtedness to total capital investment was not excessive in either area.

Most borrowers used credit to expand land holdings, or to maintain or add to machinery and equipment inventories, although in the Interlake area some loans were used to buy livestock. Some loans were said to have been made for "general farm operations" but it seems that not much credit is being used to increase efficiency of present operations other than through the purchase of land and machinery. This could reflect, of course, the unwillingness of creditors to lend for purposes that do not lead to the acquisition of an asset which provides some loan security. Or it could also reflect the lack of awareness of alternative enterprises or sources of revenue that farmers could tap on their own farms, with a more liberal use of credit. It may well be that, on some farms, there were no alternative opportunities or that the operators were unwilling to assume the risk of farming with borrowed money.

SOME ASPECTS OF THE APPLE ENTERPRISE IN NOVA SCOTIA

V. A. Heighton

Returns to the apple enterprise, in the Annapolis valley of Nova Scotia, vary widely from year to year because of variations in yields or changes in prices or a combination of both.

In recent years apple growers have been increasingly concerned with the profitability of their enterprise. In 1953, the Nova Scotia Fruit Growers Association, through the office of the provincial Department of Agriculture, asked the Economics Division of the Canada Department of Agriculture to conduct a sample survey of the organization and management of the apple orchard business in the valley. However, because of the heavy damage caused by hurricane Carol in 1953 and hurricane Edna in 1954, the Economics Division could not proceed with that study before the late fall of 1955. Farm management research workers could then study the results of operations for the 1955 crop year. True enough, 1955 was also an abnormal year in some respects: yields and the quality of the crop were above average but prices were low. Nevertheless, there was a wide variation in returns from farm to farm and the researchers could well assume that these variations were associated with differences in organization and management.

Table 1.—Relation of Size of Orchard to Returns and Other Factors, 100 Apple Orchards, Annapolis Valley, Nova Scotia, 1955

Size of orchard	Number of farms	Average yield per acre	Labor per tree	Average expenses per acre	Labor returns
		bu.	hrs.	$	$
Less than 466 trees	33	231	3.5	127	−22
466—849 trees	34	236	3.1	115	156
850 or more trees	33	265	2.2	106	937
Total or average	**100**	**251**	**2.6**	**112**	**355**

The sample was drawn from a list of growers who had at least five acres in apple orchard. These orchardists numbered 100, including 66 in Kings county, 22 in Annapolis and 12 in Hants county.

Farm Organization.—The average orchard comprised 21 acres—18.8 in bearing trees and 2.2 in non-bearing trees. They ranged from five to 75 acres in size and had, on the average, about 800 trees per orchard. The increase in size was associated with a marked reduction in expenses, per unit of production, and in labor requirements (Table 1). In years of low prices, however, returns may be too small to cover the cost of hired wages. The larger orchards also had the higher yields per acre but slightly lower yields per tree, the number of trees per acre being lower in the small than in the large orchards. The estimated investment in the orchard itself averaged $1,858 per farm, the investment in buildings $554, and the investment in specialized orchard equipment $1,027, or a total of $3,439 per farm; this total does not include the use value of tractors or other general-purpose equipment used in orchard operations.

Labor.—Growers spent 2,057 hours, on the average, on apple operations during the year. Most of that time, or 1,160 hours, were spent on harvest work. The average distribution of hours of work, among various operations, is described in Table 2.

The time spent on the apple enterprise varied from farm to farm. On the average, however, the 100 orchards included in the study required 47 minutes of labor to apply 100 gallons of spray, including the time spent in filling the tank, driving to and from the orchard and emptying the sprayer. A decline in labor per 100 gallons of spray was associated with a marked increase in labor returns. The size of tank and size of orchard also exerted a strong influence on efficiency in spraying; the larger the tank and the greater the number of bearing trees, the shorter was the average time taken per 100 gallons of spray (Table 3).

Yields.—Yields are the major determinants of success in apple production.

Table 2.—Hours of Labor on Apple Operations, 100 Apple Orchards, Annapolis Valley, Nova Scotia 1955

Operations	Hours per farm	Hours per acre	Minutes per tree
Pruning	356	17.0	23
Spraying	255	12.2	17
Fertilizing	25	1.2	2
Manuring	80	3.8	5
Other growing	181	8.6	12
Total, growing	897	42.7	59
Harvesting	1,160	55.2	76
Total, growing and harvesting	**2,057**	**98.0**	**135**

Table 3.—Relation of Minutes of Labor per 100 Gallons of Spray to Returns and Other Factors, 100 Orchards in Nova Scotia, 1955

Labor time per 100 gallons of spray	Number of farms	Average number of bearing trees	Average size of tank	Average labor returns
			gallons	$
Less than 35 minutes	33	1,089	295	765
35 to 59 minutes	33	792	227	401
More than 59 minutes	34	509	193	−87
Total or average	**100**	**794**	**238**	**355**

Orchards included in the study registered an average yield of six bushels per tree or 251 bushels per acre, or about twice the provincial average for the six-year period 1950-55. Relationships between yields, age of trees, fertilization, pre-harvest labor, expenses, and labor returns are summarily described in Table 4. Large yields resulted from heavier applications of fertilizer and manure, higher labor inputs, and increased expenses for spray materials and other supplies.

Table 4.—Relationships Between Yields per Acre to Labor Returns and Other Factors, 100 Apple Orchards, Nova Scotia, 1955

Bushels per acre	Number of farms	Proportion of tree over 40 years	Fertilizers per acre	Pre-harvest labor per acre	Expenses per acre	Labor returns
		per cent	lbs.	hrs.	—dollars—	
Under 194	33	22	396	42	99	−945
194—290	35	12	351	47	104	454
More than 290	32	16	542	57	141	1,075
Total or average	**100**	**14**	**414**	**48**	**112**	**255**

Expenses and Returns.—Growers made from four to 11 sprayings, or an average of seven sprayings per orchard. Spray material averaged $495 per farm or $24 per acre, accounting for about 24 per cent of all orchard expenses. Eighty per cent of the money spent for spray materials was for fungicides, and 20 per cent for insecticides.

They applied fertilizers, on the average, at a rate of 414 pounds per acre and a cost of $239 per farm, and they applied manure at an average rate of 3.7 tons per acre and an estimated cost of $3 per ton. The combined costs for fertilizers and manure represented about 22 per cent of all costs. Tractor use, equipment, and containers represented about 14, 10, and eight per cent, respectively, of all expenses for the apple enterprise. Total costs averaged $2,114 per farm.

Sales of apples averaged $2,122 per farm. Support payments, in the 1955-56 crop year, under the federal price support legislation, averaged $331 per farm.

Labor returns averaged $355 per orchard. The time spent on the apple enterprise amounted to 2,057 hours, on the average, which gives an average return of about 17 cents per hour. Low prices for the 1955 apple crop were largely responsible for these low returns. Had prices been equivalent to the average for the 1947-56 ten-year period, receipts would have been twice as large and labor returns would have averaged $1.41 instead of 17 cents per hour.

PUBLICATIONS OF THE ECONOMICS DIVISION

Chronology of Canadian Agricultural Policies, 1952-1956. Dunbabin, Margaret I. Ottawa, November 1957. pp. 121.

A consolidation of the material published in *Canadian Agriculture in 1952: a Chronology of Federal Policies* and in bulletins of the same title for the years from 1953 to 1956.

Canadian Agriculture in 1957. A Chronology of Federal Policies. Dunbabin, Margaret I. Ottawa. February 1958. pp. 69.

The sixth in a series of annual publications recording changes in federal policies affecting Canadian agriculture and important events connected with these policies.

Provincial Agricultural Legislation in Quebec and Ontario, 1956-1957 supplement. Strachan, Lloyd. Ottawa. February 1958. pp. iii + 51-68.

A supplement to "Provincial Agricultural Legislation in Quebec and Ontario, 1955", this publication brings up to date the summaries of agricultural statistics included in that bulletin; it outlines the nature of the amendments and of the legislation passed in 1956 and the first half of 1957.

Handbook of Agricultural Statistics. Part IV, Food Consumption in Canada 1926-55. (Reference Paper No. 25). Prepared in the Agriculture Division of the Dominion Bureau of Statistics and the Economics Division of the Department of Agriculture. Ottawa. 1958. pp. 31.

This handbook contains statistical data on the supply, disposition and domestic disappearance of many food products.

Exports, Imports and Domestic Disappearance of Agricultural Products as a Percentage of Production—Canada, 1935 to 1956. Berthiaume, Rachel. Ottawa. April 1958. pp. 8.

A statistical report replacing an earlier one published in April 1957.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Economic Survey of Europe in 1957. Prepared by the Research and Planning Division, Economic Commission for Europe, Department of Economic and Social Affairs. Geneva, 1958. pp. xii + 291 and Appendices.

A report on the eleventh economic survey of Europe, prepared by the secretariat of the Economic Commission for Europe. The purpose of the survey is to analyze developments in the European economy and tendencies elsewhere which may affect the economic framework of Europe.

Statistical Yearbook, 1957. Statistical Office of the United Nations, Department of Economic and Social Affairs. New York, 1957. pp. 674.

The ninth issue of the U.N. *Statistical Yearbook.* Completed questionnaires from the German Democratic Republic and from Czechoslovakia have made it possible to give in this 1957 Yearbook a wide range of statistics for the U.S.S.R. and all European countries except Albania. The territorial scope of many of the tables has been widened and more comprehensive and accurate world aggregates are provided.

A new chapter, *International Economic Aid,* gives statistical data on grants and loans made to under-developed countries by individual governments and international governmental agencies, and the contributions of governments to international technical assistance, relief and lending agencies.

Integrated River Basin Development. Department of Economic and Social Affairs, New York. 1958. pp. viii + 60 and Figs (maps).

A report by a panel of world-renowned experts on the administrative, economic and social implications of integrated river basin development.

The experts give special consideration to the *Scope and purposes of river basin development;* the *Major aspects of integrated river basin development; Some specific problems encountered in river basin development; Co-operative action in developing an international river basin;* and *Lines of action.* In their consideration of lines of action they review the common problems which require international action. They suggest five steps "to assure the fullest application of the resources of studies, materials, people and funds that are at hand".

These steps are:

"1) Improving basic services in hydrology
2) Sharpening the tools for analysis and for concrete action in water resource utilization
3) Stimulating scientific and technical investigations
4) Aiding countries in developing their river basins
5) Laying the groundwork for reconciliation of conflicting interests over river basins of an international nature".

Industrialization and Productivity. Bulletin 1. Department of Economic and Social Affairs. New York. April 1958. pp. 77.

A new *Bulletin* for people "engaged in the formulation and execution of plans and projects of industrialization in under-developed countries". The first issue contains articles on *Capital Intensity in Industry in Under-developed Countries; Choice of Technology in Industrial Planning; Capital Intensity in Heavy Engineering Construction; Hire-purchase Loans for the Mechanization of Small Industry;* and *Use of Accounting as an Aid to Management in Industrial Enterprises in Under-developed Countries.*

OTHER PUBLICATIONS

A Concept of Agribusiness. Davis, John H. and Ray Goldberg. Division of Research, Graduate School of Business Administration, Harvard University, Boston. 1957. pp. xiv + 136.

The authors have coined a new word, "Agribusiness", to describe the interrelationships between agriculture and those industries which prepare supplies for agriculture or process and distribute agricultural products. Their interest in agribusiness stemmed from the recognition that many industries rely on agriculture for part of their materials. Business management decisions have an impact on agriculture which should be carefully studied. And, a study of the economic, technical and human aspects of the relationships between agriculture and industry should lead to a more satisfactory degree of co-ordination and enable the basic segments of the economy to meet the needs of a growing population more effectively.

Davis and Goldberg have performed this pioneer task with considerable success. They have measured, in quantitative terms, the two-way interdependence between industry and agriculture in the dual roles of suppliers and purchasers of goods, in the United States.

The first chapter describes *The Genesis and Evolution of Agribusiness,* gives a broad historical review of agricultural self-sufficiency, sketches a picture of the technological revolution on and off the farm, and interprets agribusiness as a product of the dispersion of functions.

Chapter 2 explains *The Nature of Agribusiness,* setting forth its magnitude and computing its aggregates, namely: capital structure, labor force, and output and income. It also considers the qualitative aspects of agribusiness: its strength, organizational structure, and the imperfect evolution of agriculture to agribusiness.

In chapter 3 the authors analyze, in terms of 1947 data, "The inner workings of the food and fiber sector of the economy". This analysis is made with the use of input-output tables and flow charts, which help trace "the flow of resources, goods, and services among major agribusiness enterprises" and relate "this flow to the national economy". The chapter is divided into three sections. The section on *Input-Output Analysis* describes the methods followed and the procedures involved in the use of the Agribusiness and National Economy Matrix. The second section, *Agribusiness Interactions,* describes the major components of agribusiness and their direct relationships with one another and with the remainder of the economy. The third section, *Direct and Indirect Agribusiness Relationships* is concerned with the reciprocal effects of agribusiness industries on one another and on the total economy. The last chapter, *"Agribusiness and the Future",* considers the future of agribusiness and views it as an approach to the solution of the problem of the food and fiber economy.

The National Policy and the Wheat Economy. Fowke, Vernon C. University of Toronto Press. Toronto. 1957. pp viii + 312.

Dr. Fowke's excellent study is the seventh of a series of ten studies sponsored by the Canadian Social Science Research Council and concerning the background and development of the Social Credit movement in Alberta.

His book is organized into four main parts. In Part One, he traces the development of the national policy and its impact on the growth of the wheat empire in the years before 1900. In Part Two, he discusses the grain marketing problems of western Canada during the 1900-1920 period. A chapter on *The National Policy: Competition and Monopoly* supplies a tableau of the competitive and monopolistic elements which pervaded the western economy before and during the first decades of grain farming: the monopolistic and monopsonistic position of the Hudson's Bay Company; the "monopoly clause" in the contract of the Canadian Pacific Railway; and various other inequalities of bargaining power stemming from the existence of monopolies. The reader is reminded that "The control of combination in the Canadian business world has been dealt with almost exclusively under the terms of the Combines Investigation acts of 1910 and 1923 with amendments to the present time". He is also told that ". . . competitive inequalities have ordinarily been fully compatible with the economic philosophy of the Dominion government . . ." and is given an indication of "the extent to which such inequalities have characterized the market activities of the prairie farmer". Other chapters in Part Two deal more specifically with the grain marketing problems themselves, under the following headings: *Local Elevators and the Monopoly Issue before 1910; Co-operation and Provincial Elevator Policy;* and *Western Protest and Dominion Policy.*

Part Three, *The Open Market Rejected* is a masterful exposé of the history of the open market system and of the history and policies of the Canadian Wheat Pools. It includes five chapters dealing with *The Open Market System in the Inter-War Years; The Wheat Pools and the Open Market System; Origins of the Pools; Marketing Policies of the Canadian Wheat Pools; A Résumé of Experience with Contract Pools;* and *From Open Market Compulsory Board.*

The sole chapter in Part Four, *Conclusion,* examines the economic philosophy and reviews the development of *The National Policy and the Wheat Economy.*

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

MARKETING SERVICE, ECONOMICS DIVISION
J. F. BOOTH, Chief

AUGUST 1958 **Vol. XXVIII No. 4**

CONTENTS

Page

The Economic Situation 75

Consumer Choices among Beef Roasts and Steaks based on visual inspection .... *L. E. Drayton* 78

The use of Production Functions in the study of Resource Productivity in some Beef producing areas of Alberta .... *W. Darcovich* 85

Price Spreads and Farmers' Share of the Consumer's Retail Food Dollar .... Z. Y. Yankowsky 93

Publications of the Economics Division 95

United Nations Publications 95

Other Publications 96

EDITORIAL COMMITTEE:

G. P. Boucher, L. E. Drayton and Frank Shefrin

**Published by Authority of the Honourable Douglas S. Harkness
Minister of Agriculture**

55230-7—1

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
	1935–39=100							1949=100		1935–39=100
1913..........	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914..........	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915..........	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916..........	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917..........	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918..........	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919..........	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920..........	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921..........	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922..........	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923..........	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924..........	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925..........	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926..........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927..........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928..........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929..........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930..........	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931..........	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932..........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933..........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934..........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935..........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	85.6
1936..........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	94.6
1937..........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	108.0
1938..........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	102.0
1939..........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	109.7
1940..........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	131.4
1941..........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	164.8
1942..........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	195.7
1943..........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	208.5
1944..........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	212.4
1945..........	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	187.2
1946..........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	171.9
1947..........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	187.8
1948..........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	196.3
1949..........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	199.6
1950..........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	211.5
1951..........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	226.5
1952..........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	233.0
1953..........	220.7	221.6	179.4	263.8	250.4	234.8	207.4	115.5	112.6	248.4
1954..........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	244.6
1955..........	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	265.8
1956..........	225.6	214.2	181.6	246.9	234.5	247.6	208.8	118.1	113.4	284.4
1957..........	227.4	210.8	163.6	258.0	231.0	255.8	211.3	121.9	118.6	284.0
1957										
Oct..........	224.8	200.7	152.8	248.6	223.0	....	....	123.4	121.7	275.7
Nov..........	224.0	199.7	153.7	245.7	219.7	....	....	123.3	120.2	275.6
Dec..........	225.9	204.7	155.1	254.7	224.9	....	....	123.1	118.8	271.8
1958										
Jan..........	226.8	208.4	157.5	259.3	226.3	251.4	212.7	123.4	119.4	276.0
Feb..........	227.7	214.0	159.6	268.4	231.5	....	....	123.7	119.9	279.4
Mar..........	228.1	220.6	168.3	272.9	237.1	....	....	124.3	121.3	275.9
April........	227.9	222.7	165.5	279.9	240.6	....	213.1	125.2	123.4	279.2
May..........	228.1	223.1	157.8	288.3	244.7	....	....	125.1	122.7	278.7
June..........	227.4	221.1	155.9	286.4	242.7	....	....	125.1	122.7	....
July..........	227.0							124.7	121.4	
August.......										
Sept..........										

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1955—July 1956 include final barley and oats payments announced November 15 and 29, 1956.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

The Budget and Agriculture.—The Minister of Finance presented the Canadian budget for the year 1958 to the House of Commons on June 17. He said that although the grain crop in the western provinces was much lower, farm cash income was supported by a substantial liquidation of inventories and declined only slightly in 1957. Returns from livestock and dairy products were much higher. Wheat exports, although lower for the year as a whole, started to increase in the last quarter of 1957. Beef cattle exports have also been much higher.

The agricultural policies of the United States continued to restrain sales of Canadian farm products on export markets; direct import restrictions and massive subsidized disposals of wheat and other grains have been particularly damaging to Canadian interests.

The Canadian government surveys developments pertaining to the Common Market and the Free Trade Area in Europe. Markets, on the European continent, are of paramount importance for agricultural commodities such as wheat and coarse grains. The United Kingdom has assured Canada that its interests in the U.K. market would be fully safeguarded with regard to the Free Trade Area.

Action will be taken to afford greater protection to Canadian products against dumping. Negotiations on changes in the fruit and vegetable tariff schedule have been initiated with the United States.

Most goods used exclusively or almost exclusively by farmers are now exempt from the 10 per cent sales tax. This exemption will be extended to stock conditioners and feed supplements for poultry and livestock, sugar beet handling equipment of a kind covered by item 417 of the Customs Tariff, rodent poisons, tree guards for fruit trees, cut flowers, and all material used in the manufacture of grain and seed cleaning machines.

Gross National Product.—Canada's gross national product, or total output of goods and services, stood at a seasonally adjusted annual rate of $31.7 billion in the first quarter of 1958, about the same as in the last quarter of 1957. Disregarding the farm sector, which includes an arbitrary estimate of crop production in 1958, the level of production was about the same as in the fourth quarter of last year.

The relative stability in production was accompanied by a continued decline in business capital investment outlays, a higher rate of inventory liquidation, some weakening in export trends, a marked increase in consumer expenditures, a sharp upturn in outlays for housing, and an increase in government expenditures. Imports were further reduced. The flow of income to the personal sector was well sustained, farmers' cash income receipts increased substantially, and transfer payments, interest and dividend receipts continued to increase. Because of these happenings, the percentage rise in personal income exceeded the percentage rise in national income.

The increase in personal income since the first quarter of 1957 amounts to about six per cent, half of which stems from an increase of 28 per cent in transfer payments from government; of the latter, about half is derived from unemployment insurance benefits and the remainder from higher rates coming into effect during 1957 on old age security fund payments, family allowances and payments to veterans. Payments under the Prairie Farm Assistance Act were also higher than in the previous 12 months, reflecting poor crop yields in Western Canada and an upward adjustment in rates. Interest, dividends, and net rental income of persons rose by about seven per cent but investment income declined about eight per cent. These developments led to a gain of six per cent in personal income over the previous 12 months and a rise of four per cent in consumer expenditure on goods and services.

Population.—Canada's population reached 17,048,000 at June 1, 1958, a rise of 459,000 or 2.8 per cent over the 16,589,000 total a year before.

The 12-month increase was below the record gain of 508,000 or 3.2 per cent for the June 1, 1956-June 1, 1957 period. The smaller total is due to a decrease in immigration and an estimated increase in emigration that outweighed an estimated rise of about 24,000 in natural increase.

Prices.—Canada's consumer price index (1949 = 100) stood at 125.1 in May and in June 1958. The food component remained at 122.7 in June; a cut of 11 cents per pound for fresh tomatoes and lower prices for potatoes and oranges were balanced by higher prices for meats, particularly pork, and also eggs, apples and grapefruit.

Canada's general wholesale price index (1935-39 = 100) rose slightly in May to 228.1 from 227.9 in April, an increase in the animal products component outweighing declines in the other groups. The animal products index rose to 259.0 from 253.1 in April, mainly because of higher prices for livestock, meats, poultry, and leather; this was the sixth consecutive monthly rise in this index. Seasonal declines in prices for potatoes, onions, and fresh fruits contributed greatly to a decline to 197.0 from 198.6 in the vegetable products index.

Farm Income.—Farm net income in 1957 is estimated at a little over $1 billion, or $403 million lower than the revised estimate for 1956. Net income was lower in 1957 than in 1956 in all provinces except British Columbia and Ontario where slight increases occurred. The chief reason for the decline was the lower income from grain in the Prairie Provinces. Farm expenses and depreciation charges were a little lower but not enough to offset reduced income. Inventory holdings of grains on the Prairie Provinces were also reduced.

Table 1.—Net Income of Farm Operators from Farming Operations by Provinces 1953-1957

—	1957 (preliminary)	1956	1955	1954	1953
			(million dollars)		
Prince Edward Island	8.8	12.6	12.0	11.1	11.5
Nova Scotia	13.6	17.2	16.0	18.0	17.6
New Brunswick	20.1	26.7	17.9	21.7	20.5
Quebec	185.4	192.7	228.5	216.5	238.2
Ontario	321.9	310.7	332.5	295.1	378.6
Manitoba	77.1	130.4	91.9	65.4	109.6
Saskatchewan	187.0	441.7	333.7	144.8	500.4
Alberta	184.6	272.1	209.2	200.7	309.9
British Columbia	55.4	53.1	48.3	52.0	58.1
Canada [a]	1,053.9	1,457.2	1,290.0	1,025.3	1,644.4

[a] Excluding Newfoundland.

Cash income from the sale of farm products in the first quarter of 1958 was estimated at $604 million, a rise of $29 million or five per cent from the corresponding period of 1957. This increase stems chiefly from larger outputs

Table 2.—Gross Income of Farm Operators from Farming Operations by Provinces 1953-1957

—	1957 (preliminary)	1956	1955	1954	1953
	(million dollars)				
Prince Edward Island	27.6	31.7	30.1	28.4	28.6
Nova Scotia	50.4	54.3	49.7	51.2	50.1
New Brunswick	55.4	62.7	51.4	54.2	53.7
Quebec	463.0	475.6	481.6	463.9	466.7
Ontario	906.7	899.6	869.1	815.5	873.6
Manitoba	216.9	275.1	225.5	199.7	247.3
Saskatchewan	491.7	756.2	637.7	428.4	805.4
Alberta	438.9	532.0	458.3	441.6	557.9
British Columbia	132.0	130.6	120.4	121.5	123.8
Canada [a]	2,782.6	3,217.8	2,923.8	2,604.4	3,207.1

[a] Excluding Newfoundland.

and higher prices for livestock and livestock products. Returns from the sale of field crops were lower, mainly because of smaller marketings. Total cash income from farming operations, including supplementary payments made under the Prairie Farm Assistance Act, totaled $618 million, a rise of $42 million from the estimate of $576 million for the first quarter of 1957.

Income was higher in each province, generally because of higher returns from livestock and livestock products except in Prince Edward Island and New Brunswick where higher returns from the sale of potatoes bolstered farm income more than sales of livestock and livestock products.

Income from the sale of livestock, poultry meat, dairy products and market eggs was estimated at $367 million in the first three months of 1958, an increase of $49 million over the $318 million estimate for the corresponding period of 1957. Except for hogs, income estimates for all these commodities were higher than in the first quarter of 1957; returns from the sale of hogs declined to $75.8 million from $77.6 million. Cash returns from the sale of cattle and calves rose to $137.1 million from $97 million.

Cash returns from the sale of field crops in the first quarter of 1958 were estimated at $206 million, a drop of $21 million from the $227 million estimate for the first quarter of 1957. About two-thirds of the decline can be attributed to smaller deliveries of wheat, oats, barley and flaxseed to country elevators by Prairie farmers. The only major exception to the over-all decline was income from potatoes, which rose $1.5 million to $12.4 million from $10.9 million.

Industrial Production.—Canada's seasonally adjusted index of industrial production (1935-39 = 100) rose to 279.2 in April from 274.8 in March. The index of manufacturing output rose to 270.2 from 264.9, the durables component to 314.3 from 307.3 and the non-durables component to 242.0 from 237.8 in March.

CORRIGENDA

In Garland, S. W., *"Changes in Cropland Acreages in Manitoba, 1921-1956"*, April 1958 issue, page 29, para 5, line 2, "1951" should read "1921"; para 6, line 3, "1957" should read "1956".

On page 33, para 1, line 4, "this" should read "the". In Table 7, page 34, "25,770" should read "52,770" for all rye in the 1951 column.

CONSUMER CHOICES AMONG BEEF ROASTS AND STEAKS BASED ON VISUAL INSPECTION[1]

L. E. Drayton

Along with the growth of the self-service method of retailing beef to the consumer and the much discussed question of the effects of animal fats on human health, the problem of consumer preferences for fat or lean beef has grown in economic importance to beef producers, people in the meat trade, and meat consumers.

In 1956 the Livestock and Livestock Products Division and the Economics Division of the Canada Department of Agriculture conducted a series of three studies to obtain data on consumer opinions of beef in Canada. The first study was carried on in two downtown department stores in Vancouver during August 1956. The second took place at the Royal Agricultural Winter Fair, Toronto, in November 1956 and the third in a chain store supermarket in Ottawa during June 1957.

In all three studies work was limited to one simple objective, namely the determination of which grade of beef consumers rate best on the basis of its appearance. No effort was made to evaluate consumer ability to recognize grade from appearance or to determine reasons for expressed preferences of individual consumers.

Method of Study.—For each study eight pieces of beef were displayed to the public for a period of several days in an appropriate refrigerated case. The cuts displayed were turned over on the second day of exhibition. On occasion they were trimmed to maintain a fresh appearance for a third day. Four sets of cuts were displayed in Vancouver, four in Toronto and two in Ottawa.

A complete set of cuts consisted of four standing rib roasts and four porterhouse steaks. For both steaks and roasts there was one representing each of the following qualities: Fat A or Red Brand; Average A; Average B or Blue Brand; and Average C or Commercial[2]. An effort was made to secure as representative a sample as possible of each grade and the selection was made by experienced beef graders.

The cuts in each display were identified by number only, and were rearranged frequently to cancel out any effect on ratings given of relative positions of various qualities in the display. All grade markings were trimmed off. In Vancouver and Toronto the cuts were trimmed according to standard retail practices except that no more outside fat was removed than necessary to eliminate grade markings. In Ottawa none of the fat was trimmed off.

An interviewer was stationed with the display throughout each study. This interviewer drew the attention of passers-by to the display and asked each one of them four simple questions, namely: "Which roast do you like the most? Which do you like least? Which steak do you like best? Which do you like the least?" Respondents were asked to assume that each cut was the same price per pound and that the cuts were all of the same size. The approximate age of the respondent was recorded from observation.

Preferred Qualities.—The percentage of interviewees who said that they liked any one grade best varied considerably from store to store and city to city (Table 1). Moreover, in some instances a specific grade was mentioned for best and poorest, combined, by as few as 30 per cent of the people interviewed whereas another grade might be mentioned by as many as 70 per cent. For example, in Ottawa the average "A" roast was rated best by 17 per cent and poorest by 10 per cent for a total of 27 per cent. Evidently 73 per cent of the interviewees considered it to be neither the best nor the poorest roast on display.

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[1] The co-operation of retailers in Vancouver and Ottawa who provided facilities for two of the studies reported here is deeply appreciated.

[2] These were the grade designations in use at the time of the study. Under the revised grading system, A becomes Choice, B becomes Good, and the top quality C grade beef, Standard.

To simplify interpretation a rating system was set up. In this system the grade which was named the best in an interview scored 100 points and the one named the poorest scored 0 point. The remaining two grades scored 50 points each. These ratings, for all interviews, were added together and divided by the number of interviews. Under this system the preferred grades scored the highest average. There is little significance in the range of differences between ratings of specific grades as they are a function of the arbitrary scale used.

Table 1.—Percentage of Respondents Who Liked Each Grade of Steak and Roasts the Most, and the Least, in Vancouver, Toronto, and Ottawa, 1956-57

	Vancouver		Toronto	Ottawa
	Store 1	Store 2		
Number of records	703	428	2,906	1,198
		—per cent—		
Roasts liked most				
Fat A	32	19	11	3
Average A	33	28	50	17
Average B	21	44	24	37
Average C	13	9	15	43
No answer	1	0	0	0
Total	**100**	**100**	**100**	**100**
Roasts liked least				
Fat A	26	39	64	76
Average A	8	9	2	10
Average B	11	6	7	5
Average C	54	46	27	9
No answer	1	0	0	0
Total	**100**	**100**	**100**	**100**
Steak liked most				
Fat A	14	19	5	3
Average A	36	33	24	11
Average B	22	19	38	35
Average C	28	29	33	51
No answer	0	0	0	0
Total	**100**	**100**	**100**	**100**
Steak liked least				
Fat A	36	47	70	62
Average A	7	12	8	26
Average B	20	9	5	5
Average C	36	32	17	7
No answer	1	0	0	0
Total	**100**	**100**	**100**	**100**

There was, however, no consistency in ratings among the three studies (Table 2). In one store in Vancouver, the average A grade was preferred to all others for both steaks and roasts and the B grade ranked second. In the other Vancouver store the B grade roast was preferred to the average A but the average A steak was preferred to the B.

The average A roast and the B steak had top preference in Toronto but the fat A cuts were much less popular than in Vancouver. On the other hand the C cuts were more popular than in Vancouver and in the steaks were as highly rated as the A cuts.

In Ottawa, the C cuts, the most popular of all, were closely followed by the B. The fat A cuts were selected as "best" by very few respondents.

Comparison of Sets of Cuts.—The pictures obtained in Vancouver proved unsatisfactory for the measurement of the fat and lean areas in the cuts displayed. It is probable that a slightly greater proportion of the solid fat areas was trimmed off the top grade cuts than in the Toronto displays. Anyhow, some surface trimming had to be carried out to eliminate grade markings.

It is also probable that a larger proportion of interviewees recognized the grade of beef from its appearance in Vancouver than in the other cities as retail grading of beef is compulsory in Vancouver under provincial legislation but not in the other two cities. Opportunities for such recognition would be especially good in Store 1, as this store had separate meat counters for A and C beef. Store 2, handled only A and B beef, and sold both from the same display at the same prices. At the time of the study there was very little B grade beef offered in this store.

Effect of Fat Area on Ratings.— Planimeter measurements of the massed fat areas in the cuts displayed in Ottawa and Toronto were made from photographs of the displays[1]. These revealed that there was considerable variation among these sets of cuts (Table 3). In general, the cuts displayed in Ottawa were fatter than those displayed in Toronto. This applied in varying degrees to all grades being used. These differences may have accounted for the differences in average rating patterns in Ottawa and Toronto.

Table 2.—Average Ratings[1] of Roasts and Steaks by Grade Vancouver, Toronto and Ottawa, 1956-57

—	Vancouver		Toronto	Ottawa
	Store 1	Store 2		
Number of records	703	428	2,906	1,198
	—average rating—			
Roasts				
Fat A	53	40	24	13
Average A	63	60	74	53
Average B	55	69	59	66
Average C	29	32	44	67
Steaks				
Fat A	39	36	17	20
Average A	64	60	58	42
Average B	51	55	67	65
Average C	46	48	58	72

[1] To compute these average ratings 100 points were given for a "liked the most", zero point for a "liked the least" and 50 points for failure to answer either question.

Because of the variations in proportion of the top surface of the various roasts and steaks which was massed solid fat in each grade, the percentage fat area for the cuts displayed in Toronto and Ottawa was plotted on statistical charts, against the average rating for both roasts and steaks (Charts 1 and 2). These charts suggest that the area of massed fat was the main factor influencing the average rating given the specific cuts. With roasts, this rating tended to increase until the massed fat area reached 30 to 35 per cent of the top surface area of the cut and then decreased sharply as this area went higher. With steaks the most popular cuts seemed to be those with a massed fat area of about 20 per cent.

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[1] Photographs taken in Vancouver were not suitable for this use.

Simple correlations were computed to obtain statistical measurements of the strength of the relations shown in these charts. These correlations revealed that 67 per cent of the variation in the average ratings of all the steaks and 91 per cent of the variation in the ratings of the fatter roasts (over 30 per cent of face area, massed fat) was associated with the percentage of massed fat in the face or top surface. The average ratings of the leaner roasts were also correlated to the massed fat area.

Age and Sex of Respondents.—Although some statistically significant differences were found in the proportions of men and women who selected each grade as best or poorest, these differences were generally too small to have much importance from a marketing viewpoint. On the whole, fewer men than women were critical of fat A cuts, both roasts and steaks, men in each age group giving slightly higher average rating to these cuts than women in the same age group (Table 4). There was one exception: both the younger and the older Ottawa men were as critical as women, of the Fat A steaks.

The tendency for men to give the fat A cuts a higher rating than women was associated with a tendency to give the C cuts a lower rating. This latter tendency was more evident with respect to roasts than steaks.

Table 3.—Percentage of Area of Cuts of Beef Displayed in Toronto and Ottawa which was in Masses of Solid Fat, 1956-57

Cut and Grade	Toronto				Ottawa	
	Set 1 [a]	Set 2	Set 3	Set 4	Set 1	Set 2
	—per cent—					
Roast						
Fat A	50.1	49.5	51.3	53.4	49.4	50.4
Average A	34.3	26.0	28.2	33.1	37.2	42.4
Average B	27.4	22.8	26.5	34.0	32.3	35.1
Average C	30.0	17.2	19.6	17.6	27.5	23.5
Steak						
Fat A	47.8	40.0	48.4	42.9	44.6	46.2
Average A	18.9	28.6	30.2	28.3	39.7	37.6
Average B	26.5	24.6	29.2	29.6	30.6	32.9
Average C	20.6	28.0	19.9	26.5	24.7	21.8

[a] The measurements obtained for this set may be inaccurate. The original negatives were much smaller than for the other sets of cuts and the angle at which the photographs were taken may have led to some distortion.

There was less consistency in the variations in average rating in relation to age. The older women in Vancouver and Toronto were less critical of the fat A roasts and more critical of the C roasts than the younger women. This situation did not hold true in Ottawa. In all three cities, there was no consistent relation between age and the rating given to steaks by women.

There were some fairly wide differences in the average ratings given a specific cut and grade in a single city by men in different age groups, but no consistent pattern of variation in preferences.

United States Studies.—Several studies of consumer preferences for beef, using similar techniques, have been conducted in the United States. In some instances, carefully prepared colored photographs were shown to the housewife; in others, the housewife judged meat placed in a show case. Actual sales tests were also made.

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[1] Variation is used here in a technical sense and means the sum of the squares of the deviations of the observations about the mean. The corresponding co-efficients of correlation (r) are 82 and 95 respectively.

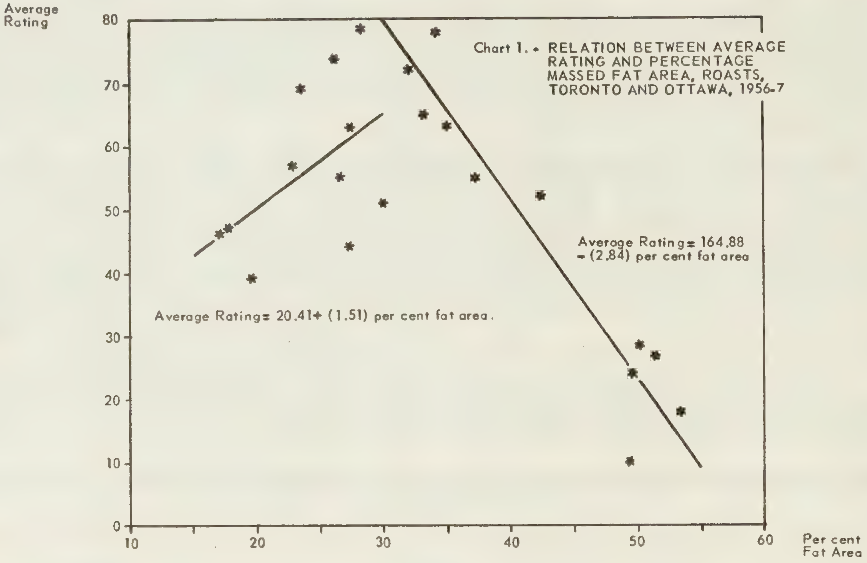
Chart 1. - RELATION BETWEEN AVERAGE RATING AND PERCENTAGE MASSED FAT AREA, ROASTS, TORONTO AND OTTAWA, 1956-7

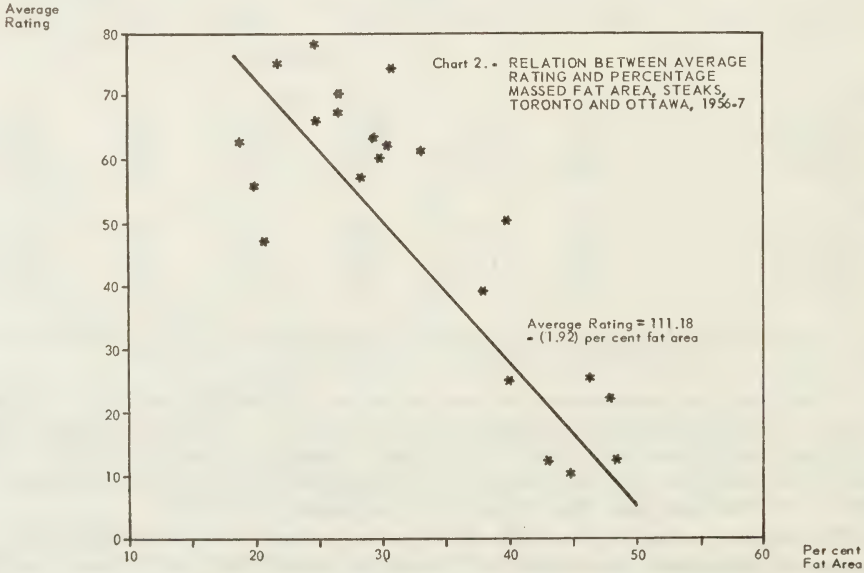
Chart 2. - RELATION BETWEEN AVERAGE RATING AND PERCENTAGE MASSED FAT AREA, STEAKS, TORONTO AND OTTAWA, 1956-7

One of the more recent studies summarizes the findings of previous work in this field as follows[1]:

> "Several consumer preference studies have attacked these problems with some success. The visual preferences of several groups of consumers

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[1] Rhodes, James V., Elmer R., Kiehl, and D. E. Brady, *Visual Preferences for Grade of Retail Beef Cuts.* University of Missouri, Research Bulletin 583, June 1955, p. 4. This report includes a list of earlier studies.

at equal and at realistic market prices for several grades of beef were shown to differ with one particular assumption regarding federal grade standards. This is the assumption that Prime is preferred by everyone until it becomes considerably more expensive than the other grades and that no one prefers Commercial unless it is cheaper than the three "higher" grades[1].

Table 4.—Ratings of Various Grades of Roasts and Steaks Related to Age and Sex, Vancouver, Toronto and Ottawa, 1956-57

City	Cut	Grade	Age and Sex Group					
			Women			Men		
			Under 35	35–55	over 55	Under 35	35–55	Over 55
			—average rating [a]—					
Vancouver....	Roast	Fat A	40	46	49	59	51	57
Toronto......	Roast	Fat A	16	20	25	25	29	27
Ottawa.......	Roast	Fat A	14	12	13	16	14	14
Vancouver....	Roast	Average A	55	63	63	59	62	59
Toronto......	Roast	Average A	73	74	74	73	73	72
Ottawa.......	Roast	Average A	53	53	51	54	58	54
Vancouver....	Roast	Average B	65	60	59	64	62	55
Toronto......	Roast	Average B	60	60	57	60	56	58
Ottawa.......	Roast	Average B	63	68	68	66	66	66
Vancouver....	Roast	Average C	41	32	29	17	25	30
Toronto......	Roast	Average C	50	46	42	44	41	43
Ottawa.......	Roast	Average C	70	67	68	64	64	66
Vancouver....	Steak	Fat A	36	35	38	45	51	41
Toronto......	Steak	Fat A	15	14	16	19	23	21
Ottawa.......	Steak	Fat A	20	18	20	20	26	19
Vancouver....	Steak	Average A	66	66	62	61	60	55
Toronto......	Steak	Average A	58	57	58	56	59	58
Ottawa.......	Steak	Average A	41	43	41	45	44	43
Vancouver....	Steak	Average B	58	50	53	51	53	56
Toronto......	Steak	Average B	67	66	68	67	65	64
Ottawa.......	Steak	Average B	62	67	66	65	63	70
Vancouver....	Steak	Average C	42	49	48	43	37	49
Toronto......	Steak	Average C	60	62	57	57	54	56
Ottawa.......	Steak	Average C	77	71	73	69	66	68

[a] Computed by valuing "liked most" 100, "liked least" 0 and neither 50.

The leaner grades have often been more popular than the more finished grades at equal prices. It is not clear how many of the consumers preferring one of the leaner grades were cognizant of the possibility that it might be somewhat less juicy or tender than a more finished grade."

In the study quoted above the findings, so far as visual preferences were concerned, merely confirmed the general conclusion quoted. The "U.S. Prime" steaks were most popular but only by a narrow margin. As to roasts, the "U.S. Good" received most first choices, followed by the "Prime".

Subsequent visual inspection studies in Colorado[2], Arizona[3], and Texas[4], gave further confirmation to this conclusion. Differences in the proportions stating preferences for specific grades were revealed in all cities with many consumers stating that they would select "U.S. Good" or even "U.S. Commercial" in preference to "U.S. Prime" beef. In all studies these selections were made on the basis of either colored pictures or displays which did not identify the grade of beef.

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[1] U.S. Grades for beef in descending order of quality were at the time of this study: Prime, Choice, Good, Commercial and Utility.

[2] *Beef, Consumer Use and Preferences.* Colorado Agricultural and Mechanical College, Fort Collins, Colorado, Bulletin 4958, April 1956.

[3] *Consumer Preference for Beef.* University of Arizona, Bulletin 267, October 1955.

[4] Branson, Robt., E., *The Consumer Market for Beef.* Texas Agricultural Experiment Station, Bulletin 856, April 1957.

Significance of Findings.—The foregoing findings of both Canadian and American studies cast considerable light on the probable selections of beef that consumers would make if they were forced to make their selections on appearance only. They have not been forced to do this, at least in recent years, since most retailers offer only one or two grades, which makes for a limited choice. There is no evidence that many consumers look for the grade when purchasing beef.

It is probable that most housewives make their beef selections on the basis of store, plus appearance of the meat. This means that the housewife seeks out a retail firm which offers the quality of beef she likes and buys her meat from it most of the time. Advertisement of low prices in competing stores or disappointment with the eating quality of meat purchased will induce experimentation with other stores. Whether such experimentation leads to a lasting switch of source of supply will depend on an evaluation of meat as cooked and served and not of comparative appearance in the meat counter.

Both independent butchers and chain store organizations seem to act in accordance with the foregoing appraisal of consumer behavior. Thus, most meat retailers endeavor to standardize the quality of the beef purchased. Some do so by restricting purchases to the Red and Blue brands within specific weight ranges. Others buy "top commercial" only: still others buy lower priced and lower quality beef. Many either make their own selections in the packing plants or arrange to have someone select the meat for them, within specifications concerning a narrower quality range than a specific carcass grade.

In recent years most chain store organizations in Canada have advertised that they handle only Red and Blue brand beef. Some independent meat markets specialize in sale of the lower grades of beef but others offer only the top grades. Moreover, the number of stores which offer commercial beef may be decreasing with the organization of the "corner grocers" into alliances and groups with meat policies similar to those of the big chains.

The specialization of so many retailers in the sale of Red and Blue brand beef was based on the assumption that they can better satisfy their customers by so doing than by offering commercial beef at lower prices. Although this assumption does not appear to have been founded on comprehensive testing in the trade, it is based on a great deal of experience in meat retailing.

Implications for Grading.—The various studies of consumer preferences have demonstrated that many consumers would select lean beef on the basis of its appearance in preference to the fat beef of the top grades. It is possible that some of these consumers may be somewhat dissatisfied with the beef they buy. For practical purposes their choice may be between stores which sell Red and Blue brand beef only and cut-rate meat markets which offer a mixture of ungraded, commercial and cow beef. Although a few meat markets specialize in the sale of top commercial beef, these stores seldom advertise that this is the quality of meat they handle. To provide consumers with a good scope of choice, beef of three or four degrees of fatness, identified by grade, should be available in the same shopping area.

The Department of Agriculture has established a new grade for beef called "Standard", effective January 1958. This grade of beef will be selected from the best quality carcasses now graded commercial. Only carcasses from young animals will be eligible. Beef of the "Standard" grade should be as tender as is consistent with its relative leanness.

The acceptability of the best quality lean beef will be better indicated if the "Standard" grade is given a fair trial. Such a trial will require considerable publicity among the trade and consumers as to what Standard beef is. The degree of co-operation of retailers in offering Standard beef and advertising its availability will largely determine its use.

It is expected that both consumers and producers will benefit from the introduction of Standard beef. Many of those who would select it on the basis of appearance alone may find that they prefer the cooking and eating qualities of Red brand beef but the availability of standard beef should result in a more effective reflection of consumer preferences in the retail market. If consumer preferences result in a strong demand for standard beef, producers will benefit from improvements in the outlets for less highly finished cattle.

THE USE OF PRODUCTION FUNCTIONS IN THE STUDY OF RESOURCE PRODUCTIVITY IN SOME BEEF PRODUCING AREAS OF ALBERTA

W. DARCOVICH

In the United States the development of production functions as a method of farm management research has increased rapidly in the postwar years. In Canada its extension has been much slower. The first study of this type was done by Harries[1] in 1947 with farm survey data; a second study was done by Clarke in 1954[2]. In 1956, Wright adopted the method to fertilizer experiments[3]. This study is a further application of the method to farm survey data; it illustrates the productivity of resource inputs in terms of their marginal products.

Three other farm business surveys were conducted in Alberta with the intent of developing production functions as a tool for the analysis of productivity. The first was a one-call survey made in June 1953; it concerned the feedlot enterprise on 72 farms in the Lethbridge irrigated area. The second was a two-call[4] survey, in November 1953 and June 1954, on 72 mixed farms in the Olds-Carstairs area. The third was also a two-call survey conducted in November 1954 and June 1955 on 36 Foothills ranches in Alberta. The questionnaires were of the "interview" type[5] and designed to obtain as complete a listing of the inputs and outputs as possible, though not a complete listing of costs. "Franchise costs", such as taxes, were omitted as these have a direct effect on farmer's income but not on farm output; tenure costs also affect farmer's income but they were omitted because rented land appeared as an input along with owned land. Where possible the inputs were classified into three categories: land, labor and capital.

The surveys emphasized the collection of data on physical inputs and outputs, as it was believed that operators could estimate them more accurately than price, value or financial data. and because time could thus be saved in the field work or enumeration phase of the study[6]. Where physical units could not be estimated the farmer was asked to make a value estimate. Where required, a dollar value was placed at the office, on the estimates of physical inputs and outputs; the main purpose of this valuation was to relate that part of the individual management function which concerns marketing to the average for all farms. Ideally, observations should be obtained from the same group of farms, over a periof of years, as these farms expand in scale. However, time, cost and other considerations make it well-nigh impossible to assemble intra-firm observations. We, therefore, had to resort to inter-firm observations made during a certain period and covering several groups of farms which vary in scale but are otherwise fairly homogeneous.

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[1] Harries, H., *The Development and Use of Production Functions for Firms in Agriculture,* a paper delivered at the 17th annual meeting of the Canadian Agricultural Economics Society held at Lethbridge, Alberta, June 23-26, 1947.

[2] Clarke, J. W., *The Production Function in Farm Management Research, Canadian Journal of Agricultural Economics,* Vol. II, No. 2, Spring 1954. pp. 36-41.

[3] Wright, P. A., *The Planning and Co-ordination of a Joint Research Project, Canadian Journal of Agricultural Economics,* Vol. IV, No. 2, 1956. pp. 40-48.

[4] The first call was to obtain information on spring, summer and harvest operations and the second on winter operations. The memory period for the farmer was about six months in each case.

[5] Houseman, A. E., *Design of Samples for Surveys, Agricultural Economics Research,* United States Department of Agriculture, January 1949. p. 4.

[6] Heady, E. O. and E. R. Swanson, *Resource Productivity in Iowa Farming,* Iowa Agricultural Experiment Station, Research Bulletin 388, June 1952, pp. 781-782.

Mixed Farms and Ranches.—In devising production functions for mixed farms and ranches, the various forms of output were combined into a one-value figure. The land input was given in terms of the total area of the farm or ranch and no allowance was made for land quality or land tenure. For ranches the labor input was in terms of total months of labor available during the year and did not take account of the quality nor the intensity of the labor. For mixed farms some allowance was made for the actual labor time spent during the winter. The capital input was in terms of a bundle of several capital items; their individual productivities vary but their aggregation gave an estimate of average productivity for all items. The management factor was excluded from the calculations, no suitable method for its measurement being available[1].

Cobb-Douglas functions were fitted to the data[2]. This type of functions is best suited to inputs which may be substituted for each other. Some degree of substitutability is obtained from the tripartite classification of inputs, as certain amounts of land, labor and capital are substitutes for each other; a further degree of substitutability is obtained by aggregating individual capital items, some of which tend to be complementary. There are situations however, where land, labor and capital complement each other, giving rise to the problem of intercorrelation between inputs. Where this intercorrelation is important, it tends to introduce a bias element in the regression estimates[3].

The best functions in terms of statistical probability and economic theory are presented in Table 1. The value of R is significant for both functions at the one per cent level, and for this reason the functions are accepted as a whole even though not all the individual elasticities are significant at the same level. The functions are acceptable on economic grounds also; they give elasticities which are positive and less than unity. The first shows that output is increased with an increase in input[4] and the second that declining marginal productivity of each input prevails as more of it is used (Table 3). Also, the marginal productivity of one resource in the Cobb-Douglas function depends on the quantities of other resources used (Table 3).

The sum of the regression elasticities is 0.935 for mixed farms and 0.969 for ranches. These are not significantly different from unity[5], suggesting constant returns to scale for both types of operations. Since further expansion in farm size can be expected in the future, and everything else being the same, this suggests that resources will be used with constant efficiency in this expansion[1]. Although the management factor is generally omitted, it is not necessarily true that its inclusion would give different results[2].

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[1] With the valuation made at the office of some inputs and outputs, that part of the management input which concerns price would tend to be held constant.

[2] The advantages derived from the use of the Cobb-Douglas equations are described in Tintner, G. and O. H. Brownlee, *Production Functions Derived from Farm Records, Journal of Farm Economics,* Vol. XXVI, No. 3, August 1944, pp. 566-67.

[3] Tintner, G. *Econometrics,* John Wiley & Sons, Inc., New York, 1952. p. 33.

[4] A positive elasticity shows the percentage increase in output with a given percentage increase in input. For example, for mixed farms, a 1.0 per cent increase in land area per farm increases output by 0.39423 per cent. In the Cobb-Douglas functions, the elasticities remain constant for all levels of input.

[5] The method to perform this test is given in:—Tintner, G. *A Note on the Derivation of Productions Functions from Farm Records, Econometrics,* Vol. 12, 1944, pp. 30-31.

The marginal products of the inputs on mixed farms and ranches[3] are shown in Table 2. With all inputs at their arithmetic means, an additional acre of land on mixed farms adds $9.28, an additional month of labor $175.57 and an additional dollar of capital $1.07 to the value of total output. For ranches the corresponding marginal products are $0.79, $228.73 and $1.46 respectively. Taking land on mixed farms as an example, its marginal productivity is to be interpreted in the following manner. With the input of land at its mean of 522 acres and the labor and capital inputs held at their means, of 13.78 months and $3,963 respectively, adding another acre to the size of the farm will add $9.28 to output.

The marginal productivity of any one input in the Cobb-Douglas equation depends on the amount of the other inputs used. This is shown in Table 3, using the marginal product of land on mixed farms as an example. Starting with 522 acres of land, the marginal product of an additional acre of land increases from $6.38 to $9.28 and $11.56 per acre as the amount of land and labor used increases from 0.5 to 1.0 and 1.5 times their means respectively. A similar increase in productivity also occurs if land is held at 784 and 261 acres (0.5 and 1.5 times its mean) and the other resources are increased to the higher levels. Table 3 shows the declining marginal productivity of one resource if the others are held constant. Thus if labor and capital are held at their means of 13.78 months and $3,963, the marginal product of land decreases from $13.04 to $9.28 and $7.26, as the amount of land used decreases from 784 to 522 and 261 acres respectively. The same conditions would apply to other inputs and the analysis is presented here because it is believed to represent actual conditions of production.

Resource Returns and Market Prices.—In a comparison of productivities, one possibility is to compare resource returns with their market prices[4]. Thus the marginal products of capital and labor and the capitalized value of the marginal product for land[5] can be compared with their corresponding market prices, interest, wages and land value respectively to determine the equilibrium position of the farm. The market price for capital is assumed to be six per cent (Table 3), wages for both mixed farms and ranches are taken at $145 per month[6] and the price of land $15 per acre on ranches and $60 per acre on mixed farms[7]. The survey areas are contiguous to each other, and it thus appears reasonable to assume the same market prices for labor and capital. Different market prices for land can be assumed, however, because of differences in land quality.

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[1] This is not entirely in agreement with the theory that crop farms can experience increasing returns and livestock farms constant returns. See Heady, E. O. *Application of Recent Economic Theory in Agricultural Production Economics, Journal of Farm Economics,* Vol XXXII, No. 4, Part 2, November 1950. p. 1136.

[2] Heady, E. O. *Production Functions from a Random Sample of Farms, Journal of Farm Economics,* Vol. XXVIII, No. 4, November 1946, p. 986.

[3] The method of deriving marginal products from the functions is described in Heady, E. O. and R. Shaw, *Resource Returns and Productivity Coefficients in Selected Farming Areas, Journal of Farm Economics,* Vol. XXXVI, No. 2, May 1954. p. 245.

[4] With the existing limitations of the method a comparison of marginal products for a given resource input on different farm types or with its market price is most reliable. See Heady, E. O., *Production Function from Randon Sample of Farms,* op. cit., pp. 998-1000.

[5] Rental or leasing arrangements could be compared directly with the marginal product of land. These comparisons were not made as the rental payment on mixed farms often includes a payment for the landlord's capital and management. On ranches, leased land is often of poorer quality than the deeded land. For example, the leasing rate in 1954 was 19 cents per acre, whereas the marginal product of land was 79 cents per acre. Source: Information given by the Department of Lands and Mines, Government of Alberta.

[6] Average monthly farm wages, without board, in Alberta for May and August 1954; and January and May 1955. Source: Dominion Bureau of Statistics, *Quarterly Bulletin of Agricultural Statistics,* January-March, April-June, and July-September 1955.

[7] Estimated bare land values.

Table 1.—Cobb-Douglas Production Functions, Fitted to Data from Surveys of Mixed Farms and Ranches [a]

Survey	Equation	Sum of elasticities [c]	R
Mixed farms	$Y=36.077X_1^{.39423**}X_2^{.19661b}X_3^{.34389**}$	0.935	0.840**
Ranches	$Y=32.700X_1^{.20529*}X_2^{.37188**}X_3^{.39212**}$	0.969	0.913**

[a] Y is output in dollars, X_1 is land in acres, X_2 is labor in months and X_3 is capital in dollars.
[b] Significant at the 10 per cent level.
[c] Not significantly from unit. For the mixed farms F = 3.34, with 68 and 1 d.f. and for ranches F = 9.54 with 32 and 1 d.f.
* Significant at the five per cent level.
** Significant at the one per cent level.

Table 2.—Marginal Productivities of Land, Labor and Capital on Mixed Farms and Ranches, at the Arithmetic Mean for all Inputs

Marginal Productivity	Mixed Farms	Ranches
Land (dols/ac)	9.28	0.79
Labor (dols/mo.)	175.57	228.73
Capital (dols/dol.)	1.07	1.46

Table 3.—Marginal Productivity of the Land with Varying Amounts of Land, Labor and Capital Use

Land	Land and capital at:—		
	0.5 of their means	At their means	1.5 times their means
—acres—	—dollars—		
784 (1.5 mean)	9.71	13.04	17.59
522 (mean)	6.38	9.28	11.56
261 (0.5 mean)	4.99	7.26	9.04

For mixed farms, the capitalized value of land of $155 per acre[1] and the marginal product of labor at $176 per month were considerably above their market prices of $60 and $145 respectively; the marginal product of capital of $1.07 was only slightly above the market rate of $1.06. However, only for land was there a significant difference[2] (Table 4) between the market price and its actual return; for labor and capital, the observed differences were not significant and can be attributed to sampling error. For the population of farms from which this sample is drawn, the inference can then be

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[1] Obtained by capitalizing the marginal product of land of $9.28 per acre at six per cent.

[2] The method for the statistical test, is shown in Heady, E. O., *Resource Productivity and Returns on 160-acre Farms in North Central Iowa.* Iowa State College, Research Bulletin 412, July 1954, pp. 1074-1075.

Table 4.—Comparisons of Resource Returns with their Market Prices

	Land (dol./ac)	Labor (dols./mo.)	Capital (dols./dol.)
		—mixed farms—	
Market Price	60	145	1.06
Actual Return	155[a]	176	1.07
		—ranches—	
Market Price	15	145	1.06
Actual Return	13	229	1.46

[a] The t-value for the difference between the elasticities giving the market value and the actual returns is 2.59 which is significant at the 5% level. The t-values for the other comparisons are not significant.

made that they were in equilibrium with regard to the amount of labor and capital, but not in regard to the amount of land which they used.

For ranches, the marginal products of $229 and $1.46 to labor and capital were considerably above their market rates of $145 and $106 respectively; conversely, the capitalized value of land[1] of about $13 was somewhat below its market price of $15. The differences between actual returns and market prices were not statistically significant for any of the resources (Table 4) and can be attributed to sampling error. For the population of ranches from which the sample is drawn, it can be inferred that they were in equilibrium in regard to the amount of land, labor and capital which they used[2].

The equilibrium of all inputs on ranches and all inputs but land on mixed farms stems from the prevailing favorable production conditions and the low degree of uncertainty which affects these farm businesses. Capital is easily accumulated and equilibrium in capital use is thus easily achieved. Equilibrium in labor use is also achieved at a satisfactorily high level as the beef producing areas are located near the centers of industrial employment opportunities supplied by Calgary and Edmonton in Alberta and various centers in British Columbia. Availability of capital would also make possible the equilibrium in land use, as shown for the ranches; the latter is further facilitated by the availability of government grazing leases.

The lack of equilibrium in land use on mixed farms may be attributed to short-run phenomena such as high crop yields or high prices in the survey year. This is not the likely situation however; although yields in the survey year were possibly higher than the long-term average they were not out of line with respect to more recent yields, and especially those which prevailed in the postwar period. Prices, too, being down from their peaks in 1951 and 1952, were fairly representative of prices in the postwar period. The lack of equilibrium in land use on these farms suggests rather the presence of longer-term causes. One possibility is that capital, while in equilibrium in the uses indicated, was still limited in its over-all supply; to ease their manual tasks, farmers may have allocated too much of available capital to the purchase of machinery and allocated too little to the acquisition of land. It suggests that for the farm as a whole, existing labor and certain capital items like machinery may be underutilized; if their quantities were to remain unchanged, these farmers could expand their operations profitably by adding more land to their farms.

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[1] Obtained by capitalizing the marginal product of land of $0.79 per acre at six per cent.

[2] The differences between actual and market returns for labor and capital are higher on ranches than on mixed farms. With the same degree of reliability in data, a significant difference is more difficult to obtain on ranches because of the smaller sample size and hence fewer degrees of freedom.

This disequilibrium condition applies to a superior group of mixed farms with high livestock intensity. The same disequilibrium can exist, and possibly to a greater extent, on other mixed farms in the province; on farms where production conditions are less favorable, uncertainty is likely to be greater and capital accumulation more difficult[1]. With a more restricted over-all supply of capital, its rationing can be extended to non-land items. This can be particularly true on farms with low livestock intensity, or high grain intensity, where the tendency to over-mechanize[2] may limit the investment in livestock enterprises. Too much of the non-land capital may go into enterprises like crops which are suitable to mechanization and too little into livestock enterprises which are less suitable for mechanization; on wheat farms, this tendency may preclude livestock production entirely. Nor is this tendency likely confined to the low livestock intensity farms; even on high livestock intensity farms where capital use appears to be in equilibrium, there may be too much investment in machinery and grain production, and too little in livestock.

These possible disequilibria on mixed farms in Alberta, when generalized to the Prairie Provinces, have some implications with regard to future expansion of livestock capacity. They suggest a relatively inelastic "supply curve" for the livestock enterprise in general, caused by the farmer's penchant towards over-mechanization, and by his need to increase livestock output by bidding land away from progressively higher uses. There is the additional likelihood that elasticity tends to increase on farms with higher livestock intensity because the alternative uses for land do not rise as sharply. These lead to the suggestion made elsewhere[3] that with given incentives, the greatest livestock expansion will occur on mixed farms already heavy in livestock. They also suggest the possibility of increasing the elasticity of the livestock supply curve through research on livestock mechanization.

The suggested equilibrium for all inputs on Foothills ranches may also apply to the few Cypress Hills ranches where production conditions tend to be somewhat similar. The equilibrium is not likely to apply to Prairie ranches where production conditions are less favorable, uncertainty is greater and capital accumulation more difficult; as a result some rationing of capital can be expected, both in the land and non-land items. The equilibrium conditions for labor are likely to be similar to those of the Foothills ranches, though its productivity can be expected to be somewhat less if capital rationing prevails.

Besides the tendency to a larger size of ranch and to equilibrium, Prairie ranches may experience other changes in the future. One possibility, with the development of irrigated areas, is that prairie ranches will find themselves in closer proximity to abundant feed supplies, allowing more winter feeding. Besides the reduction in uncertainty, this change can bring about a more efficient use of range sward. The grass on winter range is mature and lower in protein content than during the summer and can be used only for the maintenance of the animal during the winter. The same grass can be used to put on gain during the summer and an increased output of cattle would result from a shift of land from winter to summer range[1].

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[1] Capital accumulation in this case can be limited by internal capital rationing, or aversion by the farmer to being in debt, and external capital rationing or credit limitation by lending institutions. See Heady and Swanson, op. cit., pp. 769-775.

[2] The tendency towards over-mechanization may be aided by the relatively greater ease of obtaining short and intermediate term credit in comparison with the long-term credit necessary to acquire land. This has been particularly true in the postwar period with the credit facilities available under the Farm Improvement Loans Act.

[3] Darcovich, W., *The Demand and Supply of Beef in 1975*, Unpublished Typewritten Report, 1957, p. 63.

Resource Productivity in Finish Feeding.—Since the feedlot survey was on an enterprise basis, the classification of inputs differed from the traditional tripartite one on mixed farms and ranches. Of the several functions fitted, the one considered to be best in a statistical and economic sense was chosen. It has the following variables; Y is output in terms of the ending value of feeders; X_1 is the total feed input, and X_2 is the input of feeders in terms of their beginning value. The average values of these variables for the 72 enterprises are:— $Y = \$17{,}578$, $X_1 = \$3{,}866$ and $X_2 = \$11{,}763$.

The production function is as follows:

$$Y = 2.2533\, X_1^{.13469}\; X_2^{.83701}$$

The value of "R" for this function is 0.99 and is significant at the one per cent level as are the elasticities for X_1 and X_2. As on mixed farms and ranches, these elasticities are positive and less than unity, and they have the same implications; their sum is 0.972 and it is significantly different from unity[2], suggesting decreasing returns to scale. The management function is excluded from the inputs though this is not necessarily an important omission in affecting the conclusions with regard to scale; the greatest need for management arises in deciding whether the feeding enterprise should or should not be selected and much less is required in the actual feeding operation itself.

The marginal productivity of feeds and feeder animals are \$0.63 and \$1.27 per additional dollar of their inputs, respectively, with all inputs at the mean. These marginal products are significantly different from the market price of \$1.06 for both inputs[3] and they suggest that finish feeding was at a disequilibrium, too much feed and too little feeders being used. The investment in feeders is very productive and returns enough to cover capital costs plus an interest rate of 27 cents. Investment in feed, however, is not as productive and the total return is only 63 cents, which is not enough to cover the original cost of the feed. The enterprise can give a profit as the total investment in feeders is much greater than the total cost of the feed.

To the extent that the marginal productivity estimates are not unduly biased by the presence of intercorrelation between the inputs, the disequilibrium indicated above has certain implications in finish feeding. Since much of the feed is home produced, the feed input requires little cash outlay and farmers tend to be extravagant in its use. Conversely, the acquisition of feeders requires a large cash outlay and farmers tend to use them sparingly. This suggests that in equilibrium, an increase in total output would be possible if the same feed were spread over a greater number of feeders. Lack of cash is not the only reason for the sparing use of feeders. Feeder credit associations exist, and many farmers use their services[4]. Many others could qualify but they may be prevented by their aversion to credit, which can arise for many reasons, one of which is the uncertainty of profit in the finish feeding enterprise[5].

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[1] From private discussion with H. F. Peters, Superintendent, Manyberries Range Experiment Station.

[2] The F-value of 7.21 with 1 and 69 d.f. is significant at the one per cent level. The correlation between the variables X_1 and X_2 was high or 0.86 and this may bias the values of the elasticities and the resulting marginal productivities. See Tintner, *Econometrics*, op. cit., p. 33.

[3] The t-values were 6.21 and 5.57 respectively, and with 69 d.f. these values are significant at the one per cent level.

[4] Kline, C. M., *Livestock Feeding in Alberta, The Economic Annalist,* August 1950, pp. 90-91.

[5] Heady and Swanson, op. cit., pp. 765-775.

This suggests that more finish feeding of beef animals would occur if the risk involved could be reduced or eliminated; farmers who are not now feeding cattle, or using their feed otherwise, would undertake some beef production and those who are feeding would expand their operations. One way to reduce this risk is to develop institutions to extend longer-term or more flexible credit; another is to reduce the total capital requirements and risk by feeding younger animals. Some further increase in production can come by finish feeding being assumed by those best equipped to bear the inherent risks. This may mean the gradual concentration of the finish feeding industry in the hands of farmers who have a substantial capital reserve; it may also mean a greater production of finish-fed cattle by non-farm people as a purely speculative enterprise.

Limitations and Possible Improvements of the Method.—The important limitations of the method are: (1) lack of accuracy in survey data, (2) intercorrelation between inputs, with the associated problems of aggregation and classification, and (3) the omission of the management input. These limitations render the conclusions of this study mostly tentative; they would need further testing before final acceptance. Also, it should be pointed out that these difficulties are not unique to the production function method but in varying degree, are common to all types of farm management analysis[1].

Compared with the cross-tabulation technique, the production function approach requires somewhat greater accuracy to increase the possibility of statistically significant coefficients. Some improvement in accuracy was believed to be achieved by the following alternations in survey design. An attempt was made at greater homogeneity of the sampling frame, an "interview" type of questionnaire[2] was used, the enumeration of physical data was emphasized and in two of the surveys the number of calls was increased from one to two.

Although the effects of some of these changes are not certain, the increase in the number of calls from one to two appeared to improve accuracy by reducing the memory period of the farmer from one year to six months. Further improvements in accuracy would appear possible by extending the number of calls to three[3] and timing them to coincide with the period of natural activity on the farm. This procedure would extend the survey over one year's time and increase costs but it would provide an opening inventory as a check to the farmers' estimates. Of the three calls, the first would be made just after seeding to obtain inventories and seeding costs. A second call would be made after harvest to obtain yields and information on the summer's operations; the third call would be made just before seeding the following spring to obtain the winter's operations and closing inventories[4].

Despite this and other changes which can be made to improve survey design, ultimate accuracy will be determined by the ability of the farmer to remember and by his willingness to give reliable data. It may be that this accuracy is not enough and that more reliance should be given to record-keeping farms and to experimentation.

Some intercorrelation exists between inputs in all three surveys because the sampling stratification was based on the scale of operations and in general more of all inputs tend to be used with larger scale. The problem of removing the resulting biases from the elasticities is still receiving attention[1]. In the analysis in this study the problem was minimized by the aggregation of capital and other items that tend to be used jointly. Aggregation, however, makes it impossible to estimate the productivity of the individual items.

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[1] Darcovich, W., Comments on "*Alternative Methods of Farm Management Analysis*", *Canadian Journal of Agricultural Economics*, Vol. III, No. 2, 1955. pp. 66-68.

[2] Houseman, op. cit., p. 4.

[3] Jessen, R. J., *Statistical Investigation of a Sample Survey for Obtaining Farm Facts*, Iowa Agricultural Experiment Station, Research Bulletin 304, June 1942. p. 6 and pp. 32-33.

[4] The timing of the calls would depend on the type of farming area; the timing suggested here is for mixed farms.

Inputs can be classified in detail or aggregated into a single input. The tripartite classification in this study provides some balance between aggregation and disaggregation; also, it allows the enumeration of the land and labor inputs in physical terms and the comparison of the marginal productivities of the inputs directly with the corresponding prices prevailing in the market. This classification also has some important reservations; with the survey technique usually employed, the best that can be done is to obtain total months of labor available per farm; it is usually impractical to determine its quality[2]. For land, weighting for different qualities also appears impractical; homogeneity for this output should be achieved by more rigorous specification of the sampling frame. For the capital input there is need to improve the depreciation concept for livestock and also to some extent for machinery.

The management input is omitted from consideration in most studies because of difficulties in isolating and enumerating this input. Its omission may bias the estimated coefficients of the other inputs and lead to erroneous conclusions with regard to scale[3]. The problem was left untouched in this study except to the extent that office valuation of some inputs and outputs holds constant or reduces to the average of that part of the management function dealing with prices. Price management, however, likely represents only a minor part of the over-all management function; farm operators differ most in their ability to manage the physical factors and this ability was not considered in this study.

PRICE SPREADS AND FARMERS' SHARE OF THE CONSUMER'S RETAIL FOOD DOLLAR

Z. Y. YANKOWSKY

In 1957, farmers received slightly more than 44 cents of the dollar consumers spent for farm foods of Canadian origin. This represents a decrease in the farmer's share of less than one per cent from the level of the previous year. The farm share of retail food expenditure has been gradually declining since 1951, when it was 51 per cent.

More detailed calculations for 14 selected food products of Canadian farm origin showed that in 1957, retail prices of these products increased 3.7 per cent; farm prices for the same products showed an increase of 1.4 per cent and marketing margins increased by 8.2 per cent. The increase in farm prices in 1957 was the first rise since 1951 and resulted mainly from higher prices for dairy products and meat animals, particularly hogs.

Table 1 gives indexes of retail food prices, farm prices, marketing margins and farmer's share of the retail cost of 14 selected agricultural commodities for the period 1950-1957.

Tables 2 and 3 show average annual marketing margins and the farmer's share as a percentage of the retail price for 14 selected Canadian farm products.

Because of many inadequacies in the data used in these calculations the

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[1] Z. Griliches, *Specification Bias in Estimates of Production Functions, Journal of Farm Economics,* Vol. XXXIX, No. 1, February 1957, pp. 16-18.

[2] Ibid. pp. 14-16. The nature of the biases arising from omitting quality of inputs is given here.

[3] Heady, *Production Functions from a Random Sample Farms,* op. cit., p. 986

Table 1.—Indexes of Retail Food Prices, Marketing Margins and Farmer's Shares, 14 Selected Agricultural Commodities (1949 = 100), Canada 1949-1957.

Year	Retail food prices	Farm prices	Marketing margins	Farm share of rretail cost
1949	100.0	100.0	100.0	100.0
1950	101.5	101.0	103.2	98.9
1951	115.6	115.4	113.2	100.4
1952	118.2	108.6	127.1	94.6
1953	113.1	102.3	126.1	92.6
1954	110.3	97.2	126.2	90.9
1955	110.8	97.2	124.5	91.4
1956	112.1	96.8	129.7	88.0
1957	116.3	98.2	140.3	85.1

Table 2.—Average Annual Marketing Margins, 14 Selected Commodities, Canada, 1949-1957.

Commodity	Unit	1949	1950	1951	1952	1953	1954	1955	1956	1957[a]
					cents per unit					
Wheat flour [b]	lb.	3.7	4.0	4.3	4.5	4.5	5.0	4.6	4.9	5.2
White bread [b]	lb.	7.7	8.1	9.4	9.9	10.0	10.7	10.7	11.5	12.3
Beef, blue brand	lb.	18.4	20.1	21.6	29.0	26.7	24.1	24.4	25.3	28.1
Pork [c]	lb.	21.2	21.5	24.1	24.1	26.9	30.2	27.4	27.5	34.4
Chicken [c]	lb.	25.7	23.5	27.8	26.2	29.5	30.0	23.1	26.2	24.4
Eggs, A large	doz.	11.2	12.4	14.1	15.2	15.8	15.1	15.1	16.2	17.4
Fluid milk	qt.	7.9	8.2	9.1	9.8	9.5	9.9	9.9	10.1	10.7
Creamery butter	lb.	15.3	15.1	14.2	15.5	14.8	14.4	14.6	14.5	14.9
Cheese, plain process	½ lb. pkg.	19.0	19.7	21.0	24.8	24.1	23.4	24.0	21.5	22.6
Potatoes	10 lb.	18.2	18.1	17.8	26.4	22.3	20.5	27.5[d]	29.4	23.9
Canned peaches	15 oz. tin	15.4	15.5	17.1	16.9	15.9	15.9	16.7	16.3	18,1
Canned tomatoes	28 oz. tin	16.1	14.1	19.0	23.8	19.2	16.8	20.8	22.3	24.4
Canned corn	20 oz. tin	16.2	14.8	15.8	16.7	15.2	14.8	15.8	15.5	17.5
Canned peas	20 oz. tin	14.6	14.2	15.2	16.6	16.9	16.8	16.3	13.5[d]	13.8

[a] Preliminary.
[b] Based on domestic price of wheat, in store Fort William—Port Arthur less marketing charges from farm to Fort William—Port Arthur.
[c] Method used subject to revision.
[d] Revised.

Table 3.—Farmers' Share as a Percentage of the Retail Price, 14 Selected Commodities, Canada, 1949-1957

Commodity	1949	1950	1951	1952	1953	1954	1955	1956	1957[a]
				per cent					
Wheat flour [b]	49	46	42	39	41	35	38	37	34.3
White bread [b]	23	21	18	16	17	14	15	14	12.5
Beef, blue brand	64	67	71	62	57	58	59	57	54.0
Pork [c]	62	61	61	55	56	53	50	51	47.9
Chicken [c]	56	58	58	56	54	55	58	51	52.6
Eggs, A large	82	78	80	74	77	73	76	74	68.8
Fluid milk	56	55	54	54	54	53	53	52	52.2
Creamery butter	76	75	79	77	77	78	77	77	77.3
Cheese, plain process	35	32	35	27	27	28	27	37	36.5
Potatoes	48	45	49	61	43	45	41[d]	41	43.0
Canned peaches	26	23	21	22	21	22	21	24	23.9
Canned tomatoes	20	21	18	17	21	22	21	18	16.3
Canned corn	15	15	14	15	18	17	17	17	15.3
Canned peas	17	18	19	19	20	20	21	20	19.4

[a] Preliminary.
[b] Based on domestic price of hweat, in store Fort William—Port Arthur less marketing charges from farm to Fort William—Port Arthur.
[c] Method used subject to revision.
[d] Revised.

figures shown in the tables are not a precise measure of the costs or the farm share of the consumer's dollar for any one year but they supply a reliable indication of the trend for a particular commodity from year to year.

PUBLICATIONS OF THE ECONOMICS DIVISION

Consumer Choices of Beef Roasts and Steaks. The Livestock and Livestock Products Division and the Economics Division, Canada Department of Agriculture. Ottawa, March 1958. pp. 8 + Figs.

A report on a series of studies of consumer choices among various cuts of beef.

Canada-Trade in Agricultural Products with the United Kingdom, the United States and All Countries. 1956 and 1957. Ottawa, May 1956. pp. ii + 23.

The third in a series of annual publications.

Production and Storage Facilities for Frozen Fruits and Vegetables in Canada. Drayton, L. E. and D. W. Ware. Ottawa, April 1958. pp. 29.

This study of the state of development of the frozen fruit and vegetable industry of Canada is divided into four sections. *Introduction; Organization of Production; Capacity and Potential Expansion* and *Competitive Position.*

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Water for Industrial Use. Department of Economic and Social Affairs. New York, 1958. pp. viii + 44.

The introduction reviews problems arising from the industrial demand for water in competition with older and more traditional claims on water resources. Chapters 2 and 3 deal with quantity and quality aspects of industrial water use. Chapter 4 supplies an analysis of industrial water costs and Chapter 5 discusses the means of conserving limited water resources. The last chapter deals with water policy and industrial development and tasks to be performed at the national and international levels.

Economic Survey of Latin America, 1956. Department of Economic and Social Affairs. New York, 1957. pp. xiii + 183.

A study prepared by the secretariat of the Economic Commission for Latin America. Parts One and Two supply an analysis of the *Economic Trends in Latin America during 1956* and of the *Trends of the Main Production Sectors.* Part Three includes a *Preliminary Study of the Effects of Post-war Industrialization on Import Structures and External Vulnerability in Latin America* and a study of *Productivity of Labour and Land in Latin American Agriculture.*

Economic Bulletin for Latin America. Vol. II, No. 2. Santiago, Chile. October 1957. pp. 89.

This issue of the *Bulletin* has chapters on: *Latin America's foreign trade in the early months of 1957; The economic development of Bolivia;* and *Index clause in deferred payments.*

OTHER PUBLICATIONS

Proceedings of Conference on "Agriculture in the British Economy", held at Brighton, Sussex, England, November 15-17, 1956. Watson, J. Scott, Ed, Imperial Chemical Industries Limited, Central Agricultural Control, 2 Buckingham Gate, London, S.W. 1, March 1957. pp. 311.

The 1956 conference on agriculture in the British economy was called, with the approval of the Ministry of Agriculture, Fisheries and Food to consider the part which British agriculture could or should play in supplying the future food requirements of the United Kingdom.

The Proceedings contain the papers presented at the conference and a record of the discussions which followed their presentation.

The papers are grouped into three parts. Part I is concerned with *The Present Position of Agriculture and the Future Demand for Food;* it contains an *Opening Address* by Mr. Stephen Cheveley, chairman, Central Agricultural Control, ICI; a paper on *Agriculture's Place in the National Economy* by E. A. G. Robinson, a world-renowned professor of economics from the University of Cambridge; and a paper on *The Sources of our Food Supplies* by E. F. Nash of the University College of Wales, one of Great Britain's leading agricultural economists. Part II studies *The Contribution which United Kingdom Agriculture Could Make in Meeting the Future Demand for Food.* It groups a series of papers on *Future for Arable Crops; Future for Pigs and Poultry; Future for Milk; Future for Beef and Sheep;* and *Home Feed Resources for Livestock.* The concluding Part deals with *The Ways of Achievement.* It contains four papers on *The Effective Use of Manpower; Capital Needs of British Agriculture; Government Support, Price Policy and Production Grants;* and *Finance for Agriculture.*

Diesel Tractor Costs and Performance in the East of Scotland, 1956-57. Horsburgh, A. S. The Edinburgh and East of Scotland College of Agriculture (Department of Economics), 22 Rose Street, Edinburgh, 2. May 1958. pp. 16.

A report on an economic study of diesel tractor costs.

Finite Queuing Tables. Peck, L. G. and R. N. Hazelwood. Publications in Operations Research No. 2. Operations Research and Mathematics Group, Arthur D. Little, Inc., Cambridge, Mass. Published by John Wiley & Sons, Inc., New York. 1958. pp. xvi + 210.

A monograph which provides tables for the solution of many queuing problems. It will be especially useful to people who, although conversant with the theoretical aspects of queuing theory, lack directions for its applications to operating problems.

Cost Accounting for Agriculture. Part I: Methodological Procedure for Determining Cost of Producing Farm Crops. Furniss, I. F. Illustration Stations Division, Central Experimental Farm, Canada Department of Agriculture. Ottawa, February 1958. pp. 41.

A monograph prepared especially for the guidance of research officers of the Illustration Stations Division of the Experimental Farms Service.

Farm Incomes in England & Wales, 1955-56. Ministry of Agriculture, Fisheries and Food. London: Her Majesty's Stationary Office. 1957. pp. 66.

The ninth in a series of reports on the results of the Farm Management Survey begun in 1936-37. Reports for earlier years were issued by the Agricultural Economics Research Institute at Oxford.

The main body of the present report deals with farm incomes under the following headings: *Cropping, Livestock, Net Income, Farm Revenue, Farm Expenditure, Tenants' Valuations,* and *Gross and Net Output.*

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

MARKETING SERVICE, ECONOMICS DIVISION
J. F. BOOTH, Chief

OCTOBER 1958 Vol. XXVIII No. 5

CONTENTS

Page

The Economic Situation 99

Flexible Loan Repayment Plan for Okanagan Fruit Farmers *R. C. Gilstorf* 101

The Farm Business in the Rocky Mountain Trench of British Columbia—Part I . . . . *D. C. Crossfield* 106

Productivity of Capital in Wheat Production on the Grain Farms in Saskatchewan . . . . *J. K. Wiens* 116

Publications of the Economics Division 120

EDITORIAL COMMITTEE:

G. P. Boucher, L. E. Drayton and Frank Shefrin

Published by Authority of the Honourable Douglas S. Harkness
Minister of Agriculture

55232-3—1

ANNUAL AND MONTHLY INDEX NUMBERS

WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
	1935–39=100							1949=100		1935–39=100
1913	83.4	...	...	...	...	...	85.4	49.2	44.4	...
1914	85.4	...	...	...	...	85.3	90.2	49.6	46.0	...
1915	91.8	...	...	...	...	91.6	96.9	50.3	46.8	...
1916	109.8	...	...	...	...	100.5	101.7	54.2	51.8	...
1917	148.9	...	...	...	...	140.5	140.7	63.7	66.9	...
1918	166.0	...	...	...	...	160.2	164.1	72.0	76.9	...
1919	174.7	...	...	...	...	167.9	169.1	78.8	82.2	...
1920	203.2	...	...	...	...	186.5	190.1	90.5	94.4	...
1921	143.4	...	...	...	...	152.5	147.4	80.9	72.5	...
1922	126.8	...	...	...	...	134.1	124.6	74.9	61.5	...
1923	127.7	...	...	...	...	130.6	118.3	75.2	61.9	...
1924	129.5	...	...	...	...	131.9	122.3	74.0	60.7	...
1925	133.8	...	...	...	...	131.8	123.2	74.6	63.4	...
1926	130.3	144.4	158.5	130.2	...	130.6	119.9	75.9	66.6	...
1927	127.3	138.6	149.4	127.8	...	131.2	119.9	74.6	65.3	...
1928	125.6	136.3	134.3	138.2	...	129.3	118.3	75.0	65.6	...
1929	124.6	140.8	137.2	144.4	...	127.9	117.6	75.8	67.1	...
1930	112.9	119.5	105.8	133.3	...	117.0	105.6	75.3	65.6	...
1931	94.0	78.9	65.0	92.7	...	100.9	92.2	67.9	51.4	...
1932	86.9	65.5	60.4	70.5	...	93.3	89.3	61.7	42.8	...
1933	87.4	69.3	69.3	69.2	...	89.8	88.8	58.8	42.3	...
1934	93.4	83.5	80.5	86.5	...	95.5	96.8	59.6	46.2	...
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	85.6
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	94.6
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	108.0
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	102.0
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	109.7
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	131.4
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	164.8
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	195.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	208.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	212.4
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	187.2
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	171.9
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	187.8
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	196.3
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	199.6
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	211.5
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	226.5
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	233.0
1953	220.7	221.6	179.4	263.8	250.4	234.8	207.4	115.5	112.6	248.4
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	244.6
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	265.8
1956	225.6	214.2	181.6	246.9	234.5	247.6	208.8	118.1	113.4	284.4
1957	227.4	210.8	163.6	258.0	231.0	255.8	211.3	121.9	118.6	284.0
1957										
Oct	224.8	200.7	152.8	248.6	223.0	...	...	123.4	121.7	275.7
Nov	224.0	199.7	153.7	245.7	219.7	...	...	123.3	120.2	275.6
Dec	225.9	204.7	155.1	254.7	224.9	...	...	123.1	118.8	271.8
1958										
Jan	226.8	208.4	157.5	259.3	226.3	251.2	212.2	123.4	119.4	275.8
Feb	227.7	214.0	159.6	268.4	231.5	...	...	123.7	119.9	277.3
Mar	228.1	220.6	168.3	272.9	237.1	...	...	124.3	121.3	274.8
April	227.9	222.7	165.5	279.9	240.6	262·7	213.1	125.2	123.4	278.5
May	228.1	223.1	157.8	288.3	244.7	...	...	125.1	122.7	279.0
June	227.4	221.1	155.9	286.4	242.7	...	...	125.1	122.7	280·3
July	227.0	219·4	159·4	279·3	241·6	...	...	124.7	121.4	279·2
August	226·8	215·9	156·5	275·2	...	...	...	125·2	122·6	...
Sept	...	...	...	...	...	...	...	...	...	...

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1956—July 1957 include final barley and wheat payments announced June 11 1958.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

National Agricultural Policy.—In a statement to the House of Commons on agricultural policy, in August 1958, the Prime Minister announced that the government will submit legislation at subsequent sessions of the House to bring into being a "far-reaching and comprehensive program designed to fill some of the gaps in our national agricultural policy which, among other things, will provide for the particular needs of western grain producers."

The main points of this program are as follows:

1. The government proposes to continue the fund to assist in the export of surplus wheat stocks to non-commercial markets under the Colombo Plan.
2. The government is studying in consultation with the provinces and hopes to introduce at the next session of parliament, legislation in co-operation with the provinces which are prepared to join, to provide for a comprehensive crop insurance program.
3. The government is giving sympathetic study to the establishment, under provincial administration but with federal financial assistance, of a forage bank program under which farmers will receive certain incentives to put up forage as a reserve against an emergency situation.
4. The government is presently engaged in a comprehensive study and review of the Canadian Farm Loan Act, the Farm Improvement Loans Act, and the Veterans' Land Act, with a view to determining where enlargement of scope, expansion in function, or improvement in methods of operation may be required.
5. As a means of meeting the small farm problem the government has under consideration ways and means of improving the level of living for farmers on small farms by means of better land use, encouraging the formation of economic family farm units, improving technical training, extending unemployment insurance benefits to certain classes of farm workers, and by extending the vocational and technical training agreement for the benefit of those who wish to enter new occupations.
6. Plans are already under way for a national conservation conference.

The Prime Minister stated that "the basic problems of Canadian agriculture will yield only to long-range solutions . . . The long-range plans now being formulated by the government will be instituted as soon as possible. They will constitute a truly national program. Several of these measures are designed to meet the particular regional problems of western farmers. The others are truly national in application and will be a potential source of help to every farmer in Canada, as has been the legislation so far introduced in connection with the Agricultural Stabilization Act. What we are trying to do is to establish a concept of national policy designed to ensure equality of opportunity for all Canadians."

External Trade.—Canada's commodity imports declined ten per cent from $479.5 million in July 1957 to $433.5 million in July this year. They also declined 11 per cent from $3,384 million in January-July 1957 to $3,006.7 million in January-July 1958.

Total exports to all countries declined six per cent from $449.2 million in July 1957 to $421.7 million in July this year. However, increases in four of the previous six months raised the January-July total one per cent from $2,779.7 million last year to $2,803 million this year.

Imports from the United States declined from $330.7 million in July 1957 to $289.2 million in July 1958, lowering the seven-month total from $2,466.7 million to $2,109.9 million. July exports to the United States dropped from $255.3 million in 1957 to $249.5 million in 1958 and January-July exports from $1,646.6 million to $1,618.4 million. The July import balance was thus reduced from $75.4 million to $39.7 million and the January-July balance from $820.1 million to $491.5 million.

Purchases from the United Kingdom rose from $45.5 million in July 1957 to $48.2 million in July this year, raising the January-July total from $305.6 million to $314.8 million. July exports rose from $69.3 million to $74.1 million and January-July exports from $410.3 million to $443.8 million. The July export balance with the United Kingdom thus rose from $23.8 million to $25.9 million and the January-July balance from $104.7 million to $129 million.

Industrial Production.—Canada's seasonally adjusted index of industrial production (1935-39 = 100) rose from 279.0 in May to 280.3 in June 1958. The adjusted mining index rose from 285.7 to 290.2, the index of manufacturing output from 275.1 to 277.8 and the durables component of the industrial production index from 322.5 in May to 329.1 in June; the non-durables index remained practically unchanged at 245.0. The adjusted electricity and gas index dropped from 307.3 to 292.9.

Industrial Employment.—Canada's composite index of industrial employment (1949 = 100) rose from 118.7 at June 1 to 121.1 at July 1, 1958. At July 1, 1957 the index was at 126.6. Average weekly wages and salaries declined from $70.76 in June to $70.61 in July 1958 but rose from $68.33 in July 1957. The composite payroll index dropped from 202.2 in July 1957 to 199.8 in July 1958.

Employment increased in all industry divisions from June 1 to July 1, 1958; forestry showed a greater-than-normal increase for the second month in succession. Employment in the building and general engineering sector of the construction industry showed signs of weakness, the seasonally-adjusted index declining about three per cent between June 1 and July 1.

Carloadings.—Cars of railway revenue freight loaded on lines in Canada in the seven days ended August 14 totaled 75,321, a 9.7 per cent decline from the 83,369 cars loaded in the corresponding week of 1957. The January 1-August 14, 1958 loadings totaled 2,308,368 cars, a seven per cent decline from the 2,482,897 cars loaded in the corresponding period of 1957.

Consumer Price Index.—Canada's consumer price index rose from 124.7 in July to 125.2 in August 1958, largely because of an advance from 121.4 to 122.6 in the food index. Fresh tomato prices, which normally drop quite sharply during the first weeks of July and August were unusually high; prices for most other fresh vegetables experienced seasonal declines. Apple prices reflected initial marketings of the new crop and prices of imported bananas and oranges increased. Beef prices continued to decline slightly, pork prices edged up and the price of eggs dropped about four cents a dozen.

Commodities and Services Used by Farmers.—Canada's composite index of commodities and services used by farmers (1935-39 = 100) advanced from 236.8 in January to 244.7 in April 1958; the index stood at 241.5 in April 1957. The composite index, exclusive of farm family living, rose from 260.1 in April 1957 to 251.2 in January and 262.7 in April 1958.

FLEXIBLE LOAN REPAYMENT PLAN FOR OKANAGAN FRUIT FARMERS[1]

R. C. GILSTORF

Fruit growers in the Okanagan valley of British Columbia face production hazards as do most agricultural producers in all parts of Canada. In some respects fruit growing is more hazardous than other types of farm production. During blossom time the fruit trees are very vulnerable to weather damage. And, during the development stage, the fruit crop is one of the least hardy crops to withstand adverse growing conditions such as unfavorable weather, pests and diseases.

A predominant risk element in the Okanagan valley is frost damage. The damage can occur in the spring during blossom time or in the fall before the fruit is picked. The fruit trees may also be damaged or destroyed during winter because of extreme cold weather. Such was the case in 1950 and 1955. Moreover, the fruit crop may be damaged by hail during the growing season and weather conditions may contribute to the development of diseases such as fruit scab. Pests can also cause losses to the fruit crop if adequate protective measures are not taken.

The vulnerability of fruit orchards to these production hazards results in considerable variation in the size of the annual fruit crop. This, in turn, is reflected in the size of the farmer's annual income and in the amount of money available for debt retirement. In some years large payments can be made, in other years farm income may not be sufficient to permit any payment.

A farm loan repayment plan which calls for a fixed annual payment is not too well suited to situations where farm income fluctuates widely from year to year. The plan should permit adjustments in the size of the required annual payment, and should reflect the financial position of the farmer. With this in mind and at the request of the Department of Veterans' Affairs, the Economics Division made a study to devise a plan for fruit farmers whereby the annual loan payment would be made on a crop share basis. A considerable number of orchards in the Okanagan valley were acquired by their owners through the Department of Veterans' Affairs and a flexible repayment plan would assist them in repaying their credit obligations. The plan which was developed provides for the calculation of a crop share rate of payment for each orchard; it is based on the repayment ability of each of the crop-reporting districts within the Okanagan valley as measured by production figures and average prices paid during the 1946-1956 period. The underlying assumption is that future rates of production and prices will approximate the production and price data of the past 11 years.

Requirements of a Crop Share Repayment Plan.—A practical type of repayment plan must be adapted to the prevailing conditions of the area to which it is to apply. For this reason certain requirements or criteria were set up to serve as a framework for a suitable plan for the Okanagan valley.

1. The plan should be simple and easy to operate.
2. The share of the gross returns which is used for debt retirement should be related to the productivity and size of the individual orchard and to to the size of the total debt to be repaid.
3. The assessment of productivity should take into consideration the ability of the manager as well as the size and condition of the orchard.
4. The acreage in each type of fruit tree should be accounted for in relation to the average gross productivity of each type.

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[1] The second of two articles on flexible loan repayment plans for farmers. The first article, dealing with a flexible loan repayment plan for Prairie grain farms, appeared in the February 1958 issue of *The Economic Annalist.*

5. A share of the crop should be free of debt payment commitments to enable the farmer to meet his production costs.
6. A minimum acreage in tree fruits should be a necessary requirement for the orchardist to be eligible to enter the flexible loan repayment plan.

Proposed Crop Share Repayment Plan.—Within the framework set out by the above requirements, a plan has been devised for fruit farmers in the Okanagan valley. The plan permits the calculation of individual rates of payment for each orchard, in terms of the share of gross returns to be paid toward debt retirement. Such a plan permits adjustments to be made for variations in productivity among orchards and variations in the size of orchards. A highly productive or a large orchard would pay a smaller share of gross returns than a less productive or a smaller orchard. Similarly, adjustments can be made for differences in the size of total debt to be repaid and in the length of the repayment period. Past production and price data for the 1946-1956 period were used to indicate the future productivity of each orchard. In addition, an assessment rating is made of each orchard and its operator to assist in predicting future returns. Conversion factors are used to convert the acreage in different kinds of fruit on each orchard to apple-acre equivalents and a share of the predicted gross returns is excluded from the calculations, for the purpose of meeting some of the costs of production. The fruit acreage, together with the gross returns per acre and the average annual payment, will determine the percentage share of the annual receipts necessary to meet the annual debt obligation. The details of the plan and the basis of its various features will now be discussed.

Estimation of the Future Productivity of each Orchard.—To determine the appropriate rate of payment one needs some indication of the future productivity of an orchard. Past production records would constitute the best indicator but, unfortunately, these are not available for many orchards. Annual production data, however, are available for selected crop-reporting areas or districts within the Okanagan valley. There are 15 of these districts. The production and price data for each of these districts will be used to indicate the productivity of orchards within their respective districts. The data on production are published by the British Columbia Department of Agriculture and data on average farm prices by the Dominion Bureau of Statistics.

The total average annual value of production for each of the tree fruits—apples, pears, peaches, apricots, cherries, plums and prunes—was calculated for the period 1946 to 1956, for each district. These totals were then divided by the respective numbers of bearing trees to obtain an average value of production per bearing tree. A further calculation was done to show average gross returns per orchard acre for each of the seven fruits. The totals were reduced by 10 per cent as a safeguard against overestimation of productivity.

The data were not calculated for a longer period because of the effects of the wartime period, 1939-1945, on the farm price. The average annual B.C. farm price for apples for the 1940-1945 period was $1.36 per bushel compared with $1.01 for the 1946-1956 period. Corresponding figures for peaches were $2.57 and $2.09 per bushel. Inclusion of wartime prices would tend to increase the average annual value of fruit production. Production rates per tree have shown an upward trend in the Okanagan valley from 1920 to 1955. The estimated rate of production per apple tree was 5.7 boxes in 1940, 8.0 boxes in 1950 and 9.0 boxes in 1955. For peach trees the average production was 4.0 crates per tree in 1940, 5.9 crates in 1950 and 11.2 crates in 1955. These data suggest that the more recent rates of production may be more indicative of future yields than would average yields for a longer time period.

Available data indicate that the rate of productivity varies widely among districts in the Okanagan valley. For the district of Vernon during the 1946-1956 period the annual gross returns averaged $221 per orchard acre of apples. The corresponding figure for the district of Penticton was $377. Use of production data for each district overcomes this problem of variation in productivity among districts. However, within each district, there is also considerable variation in the productivity of orchards because of differences in physical factors and in the ability of the farm operator. In an attempt to make adjustments for these differences, it is proposed that a simplified appraisal of the orchard be made when an application for a loan is received. A standard assessment schedule would be used. The average production figures for the district would then be adjusted by the appropriate assessment rating when calculating the predicted productivity of an individual orchard.

Each orchard will be given an assessment rating relative to the average production conditions of the district within which the orchard is located. An orchard considered to represent average conditions will be given a rating of 100. For orchards with above-average productivity the rating will exceed 100, and consequently the predicted gross returns for that fruit farm will exceed the district average. Orchards with below-average productivity will be rated at less than 100. If past production data are available for an orchard, these data should be used to assist in arriving at the rating for the orchard.

Managerial ability of the farm operator should also be given some consideration when the assessment rating is being made. Good management practices are usually reflected in larger gross returns which in turn enable larger payments to be made towards debt retirement. For this reason the appraisal rating should include the qualifications of both the orchard and its operator.

Conversion Factors.—The combinations or relative numbers of different types of tree fruits differ among orchards. For example, apple trees may predominate in one orchard and soft fruits in another. The kind of fruit grown obviously affects the size of cash and net returns. As a result, the acreages are not directly comparable when calculating total gross returns per orchard. For the district of Penticton the average annual gross returns were $377 per acre of apples and $576 per acre of apricots for the 1946-1956 period.

It is proposed to use conversion factors by which the acreage of each of the seven fruits is converted to a common basis in terms of apple-acre equivalents. An apple-acre equivalent refers to the number of acres of apple trees necessary to yield gross returns equal to those received from one acre of each of the other tree fruits. For the district of Penticton the conversion factor or apple-acre equivalent is 1.53 for apricots and 1.80 for pears. Thus, in the process of calculating the rate of payment for each orchard the acreage of each fruit will be converted to acreage of apple-acre equivalents and the productivity will be shown per acre of apple trees.

Exemption Level.—The plan exempts a share of the gross returns from debt payment commitments for the purpose of enabling the farmer to pay some of his production costs. The operating expenses of an orchard are quite large and they represent a substantial portion of total production. Studies of apple orchards conducted by the Economics Division in 1929, 1939, and 1949 and of stone fruit and pear orchards carried out in 1949-1950 indicated that, on the average, current operating expenses amounted to about 60 per cent of gross returns; there was a wide variation from year to year, however, because of differences in sizes of crops and levels of prices. An additional feature about current operating expenses which affects the suitability of a repayment plan is the fact that a large part of the total expenses are pre-harvest or "fixed" expenses in that they recur every year regardless of the size of the crop.

Pruning, thinning, cultivation, irrigation and spraying entail heavy labor expenses, irrespective of the size of crop, and other expenses are also incurred for irrigation, fertilizers, spray material and operation of equipment. The findings made in 1939 apple study indicated that pre-harvest costs accounted for 76 per cent and harvesting costs for 24 per cent of total production costs; 1949 survey data showed that growing costs represented about 75 per cent of all production costs. (The proportion was smaller for cherries than for other fruits because the labor requirements for picking cherries are higher).

The plan exempts 45 per cent of the predicted average gross returns for the purpose of enabling the orchardist to pay the "fixed" or pre-harvest costs. Harvesting costs, payments toward debt retirement, living expenses and capital expenditures would be met from the remaining 55 per cent of the crop. The survey data showed that current operating expenses amounted to about 60 per cent of gross returns. It was also estimated that about 75 per cent of the total expenses were pre-harvest costs and 25 per cent were harvesting costs. Hence, the suggested level of exemption of 45 per cent of the predicted annual gross returns for each orchard (60 × 75 per cent = 45)[1].

Minimum Size of Orchard.—Limits should be set on the minimum size of orchard, in terms of tree-fruit acreages, which would be eligible to enter the crop share plan. For very small orchards, an excessively large share of the gross returns would be required to meet the annual payment. For these small units it probably would be preferable for the orchardist to make a fixed annual payment and to use other sources of income to assist in making the payment.

The limit would be set in terms of the share of the gross returns required to meet the annual payment. The suggested limit is 50 per cent. This is the maximum share of the crop above the exemption level required to be paid by wheat farmers participating in the V.L.A. crop share plan in the Prairie provinces. Thus, if the size of orchard, its predicted productivity, and the size of the annual payment are such as to require a share of the available gross returns which exceeds 50 per cent then the orchard would be ineligible to enter the scheme.

Example of the Operation of the Plan.—The mechanics of the proposed crop share plan permit, with relative ease, the calculation of the share of the gross returns necessary to meet the average annual payment once each orchard has been assessed as to its productivity. An example of the necessary calculations is shown by the schedule, at the end of this article. Our example pertains to an orchard in the district of Penticton, with a total acreage in tree fruits of 10.8 acres. Converted to apple-acre equivalents, the size of the orchard is 14.9 acres. The assessment rating of the orchard is 80 per cent of the district average. Assume that the owner of this fruit farm obtains a loan, which when calculated on the amortization basis, requires an annual payment of $500. What crop share rate of payment would be appropriate in this case?

For the district of Penticton the average annual gross returns received from one acre of apple trees were $377 (based on production and price data for the 1946-1956 period). This figure is reduced by 20 per cent to get the predicted gross returns for our example orchard (item 7). The level of exemption is 45 per cent of the expected gross returns. For our example the total exemption is $2,026 (item 8b).

The total annual payment required is $500 which is equivalent to $34 per apple-acre equivalent. Available gross returns are expected to be $166 per acre, thus the crop share required is $\frac{34}{166} \times 100 = 20$ per cent. The minimum size of orchard eligible to enter the scheme is 6.0 acres (item 12).

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[1] A survey of orchards in the Okanagan valley, made by the Economics Division in 1957, will provide additional information on costs of production.

An Illustration of the Type of Schedule to be Used for Implementation of the Flexible Crop Share Repayment Plan

A. Appraisal Sheet—for the purpose of assessing the relative productivity of the orchard, the managerial ability of the orchardist and the credit rating of the orchardist. The appraisal sheet would be based on the various factors involved and would be set up by competent personnel familiar with the area. Provision would be made for adjustment in the appraisal rating every five years or so, if deemed necessary. (our example orchard is given a rating of 80 per cent of the district average)

			Conversion Factor (for district of Penticton)		Acreage in apple-acre equivalents
B. 1. Total farm acreage **14.0** acres					
2. (a) Acres in orchard:	apples	**3.0**	(1.00)	(b)	**3.0**
	pears	**1.0**	(1.80)		**1.8**
	peaches	**1.5**	(1.21)		**1.8**
	apricots	**2.0**	(1.53)		**3.1**
	cherries	**1.8**	(2.16)		**3.9**
	plums	**0.5**	(0.99)		**0.5**
	prunes	**1.0**	(0.78)		**0.8**
Total		**10.8**			**14.9**
3. Acres in other fruits		**0.5**			
4. Acres in cropland		**0.5**			
5. Number of livestock:					
cattle		2			
hogs		3			
poultry		25			

6. Average gross returns per apple acre equivalent for Penticton district	$	**377**
7. Average gross returns per apple acre equivalent for this orchard (assessment rating x item 6)	$	**302**
8. (a) Level of exemption per apple-acre equivalent (45 per cent x item 7)	$	**136**
(b) Total exemption of gross returns for orchard [8 (a) x 2 (b)]	$	**2,026**
9. Average gross returns per apple-acre equivalent from which to make V.L.A. payment [7–8 (a)]	$	**166**
10. V.L.A. annual payment (a) Total	$	**500**
(b) Per apple-acre equivalent [10 (a) ÷ 2 (b)]	$	**34**
11. Share of available gross returns per apple-acre equivalent required to meet V.L.A. payment [10 (b) ÷ 9]		20 per cent
12. Minimum size of orchard in apple-acre equivalent eligible to enter scheme with 50 per cent maximum rate of payment to V.L.A. [10 (a) ÷ (50% of 9)]		6.0 acres

NOTE: Each year after gross returns for the seven fruits are known the procedure will be as follows:

(r) Total gross returns for the seven fruits		
(s) Total exemption of gross returns to meet pre-harvest costs [8 (b)]	$	**2,026**
(t) Total available gross returns from which to make V.L.A. payment (r − s)		
(w) Total amount to be paid to V.L.A. [t x item 11]		

Each year after total gross returns for the seven fruits are known, the exemption of $2,026 is deducted and 20 per cent of the remainder is the amount paid toward debt retirement. If the gross returns do not exceed the exemption amount, no payment is required.

In order to test the feasibility of this suggested plan, the repayment experience of the scheme (had it been in operation during the past few years) was examined for a number of farms in the Okanagan valley by V.L.A. supervisors. Annual production data for the orchards chosen were available for the past three to five years. The tests showed that the assessment rating given each orchard was a major factor in determining the rate of repayment and resulting repayment experience. Therefore, past production data for the orchard, if available, should be given considerable weight when assessing the productivity of the orchard at the time of application for entry into the crop share repayment plan. In addition, there should also be a provision whereby the repayment experience of the orchard is reviewed every five years or so and adjustments made in the rate of payment, if deemed necessary. For new orchards wishing to enter the crop share scheme and for which no production records are available, the plan should be based largely on the average production figures of the district with adjustments permitted later as more data become available.

THE FARM BUSINESS IN THE ROCKY MOUNTAIN TRENCH OF BRITISH COLUMBIA—PART I[1]

D. C. Crossfield

THE LAND

The Rocky Mountain Trench being largely a grazing land area, most of this area is still in unimproved land. According to the 1951 census, as many as 112,148 acres, or about 75 per cent of the 150,792 acres in the total farm area are in unimproved land.

Comparative figures, for the study area, give an even smaller proportion of land in an unimproved state (Table 1). Of a total farm acreage of 43,983 acres, 36,459 acres or 83 per cent are in unimproved land, which leaves 7,524 acres or only 17 per cent in improved land. However, 9,423 of the 36,459 acres in unimproved land are considered to be potentially arable; were they brought under the plow, the total arable acreage would rise to 16,947 acres and represent about 39 per cent of the total farm area.

Table 1.—Improved, Unimproved and Potentially Arable Land, According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Farm Type	Improved land	Unimproved land	Total acreage	Potentially arable land
	—number of acres—			—acres—
Beef	2,266	8,752	11,019[a]	1,570
Dairy	940	4,224	5,163[a]	1,102
Mixed livestock	994	6,042	7,035[a]	1,557
Mixed crop and livestock	1,616	6,552	8,168	1,515
Other crop and livestock	699	2,747	3,446	1,435
Off-type	377	4,261	4,638	656
Part-time	632	3,881	4,513	1,588
All farms	**7,524**	**36,459**	**43,983**	**9,423**

[a] Figures were rounded out.

The average acreage, per farm, for the 105 farms included in the study, totalled 419 acres; of this acreage 72 acres, or 17 per cent were considered as improved and 347 acres, or 83 per cent, as unimproved (Table 2). Of the unimproved acreage, however, 90 acres are considered to be potentially arable. When these acres are brought under cultivation, the total improved acreage will be 162 acres or about 39 per cent of the average total farm area. One may note, here, that the percentage distribution of the land, according to its stages of actual and potential development, is exactly the same for the 105 farms included in the study as for the whole study area. Of the 105 farms, only 17 had no potentially arable acreage and one had as much as 1,005 acres.

The "other crop and livestock" farms were the largest in size—574 acres—and had the largest average acreage in improved and unimproved land, 116 and 458 acres respectively; they also had the largest average acreage in potentially arable land, 239 acres compared with 99 and 97 for the part-time and mixed livestock farms respectively, and 90 acres for the 105 farms as a group (Table 3).

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[1] A previous article on *Farming in the Rocky Mountain Trench of British Columbia* appeared in the December 1957 issue of *The Economic Annalist.* A concluding article will appear in the December issue.

Table 2.—Land Use, According to Farm Types, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

	Types of farms							
	Beef	Dairy	Mixed live-stock	Mixed crop and livestock	Other crop and livestock	Off-type	Part-time	All farms
	—acres—							
IMPROVED LAND								
Crops	16	17	14	33	27	5	7	17
Hay	59	43	40	35	36	27	27	40
Pasture	13	7	5	2	33	2	3	8
Other improved land	2	1	....	8	16	1	....	3
Farmstead	4	4	3	3	4	3	2	3
Total improved land	**94**	**72**	**62**	**81**	**116**	**38**	**39**	**72**[a]
UNIMPROVED LAND								
Hay	14	....	5	6	....	4	2	6
Pasture	277	191	292	213	120	164	205	226
Cleared for breaking	1	1	1	2	....	....	1	1
Bush	28	82	50	58	267	233	14	75
Timber	13	14	16	31	49	5	7	17
Waste	32	37	14	17	22	20	14	22
Total unimproved land	**365**	**325**	**378**	**327**	**458**	**426**	**243**	**348**[a]
Total acreage	**459**	**397**	**440**	**408**	**574**	**464**	**282**	**419**[a]
Estimated, potentially arable acreage	65	85	97	76	239	66	99	90

[a] Figures were rounded out.

Crops.—On the average, the improved land area of the 105 farms was used as follows: 40 acres, or 56 per cent of the improved land, were in hay; 17 acres, or 24 per cent of the improved acreage, were in grain crops; and eight acres, or 11 per cent, were in pasture. Most of the unimproved acreage—226 acres, on the average, or 65 per cent of the unimproved acreage—was used as pasture.

The beef farms had the largest average acreage in hay—59 acres—and the mixed and livestock farms had a larger acreage in crops, on the average, at 33 and 27 acres respectively, more than the other types of farms. The "other crop and livestock" group of farms had the largest average acreage under cultivation, and this acreage was more evenly distributed among crops, hay,

Table 3.—Average Acreage in Improved, Unimproved and Potentially Arable Land, According to Farm Types, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Farm Type	Number of farms	Im-proved land	Unim-proved land	Poten-tially arable land	Total
		—number of acres—			
Beef	24	94	365	65	459
Dairy	13	72	325	85	397
Mixed livestock	16	62	378	97	440
Mixed crop and livestock	20	81	328	76	408[a]
Other crop and livestock	6	116	458	239	574
Off-type	10	38	426	66	464
Part-time	16	40	242	99	282
Total	**105**	**72**	**347**	**90**	**419**

[a] Figures were rounded out.

pasture and other improved land than the cultivated acreage of other groups of farms.

The dairy farms had 43 acres, or as much as 59 per cent of their improved land, in hay, on the average, but only about seven acres or ten per cent of that acreage in pasture. The corresponding figures for the mixed livestock farms are 40 acres—64 per cent—and five acres or eight per cent.

The acreage in improved pasture was small on all types of farms, averaging only about eight acres per farm, for all farms and ranging from an average of about two acres for the mixed crop and livestock and the off-time farms to an average of about 33 acres for the "other crop and livestock" farms. This small acreage, however, was counterbalanced by a large acreage in unimproved pasture, that acreage averaging 226 acres per farm, for all farms, and ranging from 120 for the "other crop and livestock" farms—the farms with the largest acreage in improved pasture—to 292 acres for the mixed livestock farms. Farmers, in the Rocky Mountain Trench, have to emphasize the production of hay for winter feeding and their farms are not well equipped for pasture irrigation. Moreover, moisture is not adequately distributed during the summer season and this uneven distribution of rainfall is not favorable to pasture growth.

Crop Yields.—Average crop yields per acre varied considerably among the various farm types. The hay crops, the most important crops grown in the area, consisted of mixed grass, mixed grass and legume, cereal hay and alfalfa hay. Alfalfa hay, with an average of about two tons, yielded the highest average tonnage per acre (Table 4). Mixed grass and legume produced an average of about 1.5 tons of hay per acre and mixed grass and cereal hay about 1.2 and 1.3 tons per acre respectively. Wheat, oats and barley yields averaged 0.4, 0.4 and 0.6 tons per acre respectively.

Table 4.—Average Crop Yields per Acre, According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955[a]

Crop	Beef	Dairy	Mixed livestock	Mixed crop and livestock	Other crop and livestock	Off-type	Part-time	All farms
				—tons—				
Wheat	0.4	0.5	0.4	0.4	0.4	0.8	0.9	0.4
Barley	0.5	0.6	0.3	0.4	....	....	0.3	0.4
Oats	0.9	0.6	0.5	0.6	....	0.4	0.4	0.6
Mixed grass and hay	1.5	0.5	0.8	1.1	....	1.7	1.6	1.2
Mixed grass and legume hay	1.6	1.1	1.6	1.4	2.1	1.6	1.1	1.5
Cereal hay	1.6	0.9	1.8	1.1	2.2	1.0	1.1	1.3
Alfalfa hay	2.3	1.9	2.1	1.8	....	1.5	2.6	2.0
Potatoes	7.0	8.0	6.8	4.6	11.1	2.2	10.0	7.8

[a] Crops with small acreages have been omitted.

The "other crop and livestock" group, which included only six farms, more specialized than others in the production of potatoes, recorded an average output of 11.1 tons per acre, the highest average of all groups of farms; the average for all 105 farms was 7.8 tons per acre.

Crop Yield and Crop Value Indexes—by Farm Type.—The "other crop and livestock" group had a crop yield index of 142 and a crop value index of 210, the highest in both cases (Table 5). This was due to the high yield and value of potato production for this group of farms. The beef type group had a crop yield index of 108 and a crop value index of 96. Here the large acreage of mixed grass and legume hay showing a fairly high yield index but having a relatively low index of value would tend to reduce the over-all crop value

Table 5.—Index of Crop Value and Crop Yield Production, by Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Farm type	Gross value per farm	Crop yield index	Crop value index
Beef	3,508	108	96
Dairy	2,048	84	82
Mixed livestock	2,672	104	110
Mixed crop and livestock	2,703	89	90
Other crop and livestock	5,330	142	210
Off-type	1,284	93	94
Part-time	1,151	97	82
All farms	**2,580**	**100**	**100**

index. Mixed livestock had a crop yield index of 104 and a crop value index of 110. The higher value index here can be attributed again to the somewhat higher acreage in potato production over that of the beef type of operation. The dairy type has the lowest crop yield index, 84, and the lowest crop value index, 82.

Crop Yield and Crop Value Indexes, by Soil Groups.—There was no significant difference in crop yield and crop value indexes among soil groups. The brown and ground water soils had a crop yield index of 97 and a crop value index of 101. The gray and complex soils had a crop yield index of 100 and a crop value index of 98 (Table 6). Production per acre did not vary appreciably between the two soil groups.

Crop Yield and Crop Value Indexes, by Soil Class, on Texture Irrigated and Non-Irrigated.—A significant difference was disclosed among the three soil classes (Table 7). The medium-textured soils had a crop yield index of 108, the fine

Table 6.—Indexes of Crop Yield and Crop Value, by Soil Group, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Soil group	Gross value	Crop yield index	Crop value index
Brown and groundwater	2,652	97	101
Grey and soil complex	2,401	100	98
Not mapped	3,083	129	103

Table 7.—Indexes of Crop Yield and Crop Value, by Types of Soil Class Texture, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Soil class	Number of farms	Gross value	Crop yield index	Crop value index
		$		
Fine to medium	45	2,704	96	105
Medium	52	2,527	108	99
Coarse	5	1,706	67	62
Not mapped	3	3,083	129	103
Total all soils	**105**	**2,580**	**100**	**100**

to medium-textured soils an index of 96 and the coarse-textured soils a low yield index of 67. Index difference between the first two soil classes probably stem from the type of crops grown, the condition of the soils and the management practices followed. The crop value indexes do not differ greatly between the fine to medium and the medium-textured soils. The coarse-textured soil, of course, is definitely inferior for crop production.

Another difference shows up when the soil classes are further separated into irrigated and non-irrigated units (Table 8). All the irrigated soil classes have a higher yield index than the non-irrigated soil classes except the non-irrigated medium-textured soils which have the highest crop yield index.

The crop value index is markedly higher for the irrigated than for the non-irrigated soils. On the irrigated fine to medium-textured soils, with a crop value index of 129, potato production is a prominent crop. On the medium-textured soils the high percentage of hay crops tends to lower the crop value index because of the relatively lower prices obtained for hay than for potatoes.

Irrigation has raised the crop yield and crop value indexes of all types of soils. An examination of the data for the non-irrigated medium-textured soils, which had the highest yield index, discloses that most of these soils were subject to river or lake action and, being thus sub-irrigated, did not need artificial irrigation. In any area where artificial moisture is required and applied, there results a marked increase in yields and crop values (Table 8).

Table 8.—Indexes of Crop Yield and Crop Value, By Soil Class and Texture, Irrigated and Non-Irrigated Lands, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

	Fine to medium texture		Medium texture		Total	
	Irrigated	Non-irrigated	Irrigated	Non-irrigated	All irrigated	All non-irrigated
Number of farms	32	13	37	15	73	32
Crop yield index	104	82	107	122	102	99
Crop value index	129	58	105	86	111	77

Use of Commercial Fertilizers.—The 105 farms spent a total of $6,113 on fertilizers. Thirty-nine per cent of the farmers visited used fertilizer, at an average cost of $149 per farm. The total tonnage used was 58 tons or an average of 1.4 tons per farm, on the 41 farms using commercial fertilizer.

FARM INVESTMENT

"Other crops and livestock" farms had the highest total investment, an average of $35,960 per farm (Table 9). Improved land, livestock and other buildings accounted for 59 per cent of the total. The beef farms were in second place with a total of $30,992; 59 per cent of which was invested in livestock, improved land and "other buildings". Dairy farms were next. The total value of dairy cattle was lower than that of beef cattle and the value of the improved acreage was also lower than on beef farms.

Part-time farms had the lowest investment of all farm groups, $15,392 or about half the investment on beef farms. Off-type farms had the highest value of unimproved land, which can be explained by the large part of their income which was derived from sale of Christmas trees.

Table 9.—Average Farm Investment, by Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

——	Beef		Dairy		Mixed livestock		Mixed crop and livestock		Other crop and livestock		Off-type		Part-time		All farms	
	$	per cent	$	per cent	$	per cent	$	per cent	$	per cent	$	per cent	$	per cent	$	per cent
Land—Improved	8,206	26	5,094	18	5,246	23	5,157	24	9,930	28	3,200	16	2,928	19	5,607	23
—Unimproved	3,307	11	3,601	13	2,499	11	2,280	10	3,006	8	5,173	26	2,487	16	3,060	13
Buildings—House	1,655	5	2,570	9	2,136	10	1,778	8	3,003	8	1,883	9	2,110	14	2,033	8
—Other	2,164	7	5,253	19	2,253	10	2,972	14	5,262	15	2,189	10	1,911	12	2,855	12
Equipment—Special	3,109	10	3,085	11	2,197	10	2,173	10	2,556	7	2,287	11	1,679	11	2,461	10
—Other	1,851	6	2,610	9	1,735	8	2,071	9	3,241	9	1,933	10	1,323	9	1,976	8
Crops	2,443	8	1,051	4	1,731	8	1,684	8	3,366	9	725	4	824	5	1,660	7
Livestock	8,123	26	4,695	17	4,564	20	3,688	17	5,562	16	2,826	14	2,091	14	4,742	19
Purchased feeds Fertilizer, seeds and supplies	134	....	177	....	110	....	71	....	34	....	55	....	39	....	97	....
Total	**30,992**	**100**[a]	**28,136**	**100**	**22,471**	**100**	**21,874**	**100**	**35,960**	**100**	**20,271**	**100**	**15,392**	**100**	**24,490**[a]	**100**

[a] Figures were rounded out.

Purchased seed and feed, fertilizer and supplies were only a very small part of total farm investment. Most of these commodities were purchased as needed.

The investment in special equipment was fairly evenly distributed throughout all groups and ranged from seven to 11 per cent of total investment. The investment in general equipment averaged eight per cent, for all farms. The investment in crops averaged seven per cent of the total and was lowest on off-type and dairy farms.

LIVESTOCK

Animal Units.—Beef cattle was the predominant type of livestock except on dairy farms. (Table 10). Beef cattle units ranged from a high of 63.9 on beef cattle farms to a low of 8.0 units on the dairy farms; the average, for all farms, was 31.0 beef animal units.

Dairy cattle animal units averaged 5.2 and were highest on dairy farms—an average of 25.1 animal units per farm—and lowest on "other crop and livestock" farms—about one animal unit per farm.

Table 10.—Animal Units per Farm, by Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Units	Beef	Dairy	Mixed livestock	Mixed crop and livestock	Other crop and livestock	Off-type	Part-time	All farms
Horses	5.1	3.8	3.9	4.3	3.2	2.4	2.2	3.8
Dairy cattle	1.7	25.1	5.4	2.6	1.0	2.2	1.3	5.3
Beef cattle	63.9	8.0	32.2	25.2	26.3	19.1	15.8	31.0
Hogs	0.3	0.3	0.7	0.5	0.6	0.2	0.2	0.4
Sheep	*	....	3.4	0.1	0.3	....	....	0.6
Goats	....	*	....	*	....	*	....	*
Chickens	0.5	0.5	0.7	0.6	11.7	0.9	0.3	1.2
Total animal units	**71.6**	**37.7**	**46.3**	**33.3**	**43.1**	**24.8**	**19.8**	**42.3**

* Almost negligible.

Horse animal units ranged from a high of 5.1 on the beef farms to a low of 2.2 on the part-time farms and averaged 3.8 animal units per farm.

Chicken animal units were most prominent on the "other crop and livestock" farms, averaging 11.7 animal units per farm. Hogs, sheep and goats were only a small part of the total number of animal units on any type of farm.

Dairy Industry.—Dairying was centered chiefly around Cranbrook, Edgewater and Golden. The size of herds ranged from less than ten, to over 30 cows per herd (Table 11). Most of the herds had from 10 to 15 cows. Production ranged from a low of 3,985 pounds per cow to a high of over 9,000 pounds and averaged 6,388 pounds per cow (Table 12). The average value of the dairy cattle was $2,652 per farm, for the dairy farms, $517 for the mixed livestock farms and $529 for all farms.

Beef Industry.—The Rocky Mountain Trench lends itself primarily to a beef type of industry. Beef farms had a calf crop of 82 per cent compared

Table 11.—Herd Size Distribution, 13 Dairy Farms, Rocky Mountain Trench, British Columbia, 1955

Number of farms	Herd size—Cows
2	5 — 9.99
6	10 — 14.99
3	15 — 19.99
0	20 — 24.99
1	25 — 29.99
1	30 and over

Table 12.—Milk Production, 13 Dairy Farms, Rocky Mountain Trench, British Columbia, 1955

Number of farms	Average production
	—pounds—
1	3,000 — 3,999
1	4,000 — 4,999
3	5,000 — 5,999
5	6,000 — 6,999
1	7,000 — 7,999
2	8,000 and over

Table 13.—Beef Calf Crop, by Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

	Beef	Dairy	Mixed livestock	Mixed crop and livestock	Other crop and livestock	Off-type	Part-time	All farms
Cows on hand Jan. 1, 1955	39.1	5.4	21.9	15.8	15.0	12.9	8.6	19.3
Purchased	0.5			0.3	0.2	0.9	0.1	0.3
Heifers on hand Jan. 1, 1955	5.0	1.2	4.3	4.0	3.5	2.8	3.2	3.7
Purchased				0.6	1.0	0.1	0.3	0.2
Total number	44.6	6.6	26.1	20.6	19.7	16.7	12.1	23.5
Calves born	36.7	5.9	16.4	11.5	11.2	10.2	7.3	16.5
Calf crop percentage	82.0	88.5	63.0	56.0	57.0	61.0	60.3	70.0

with 63 per cent on mixed livestock farms and an over-all average of 70 per cent. Mixed crop and livestock farms had a low of 56 per cent. The number of bulls per farm was also higher on beef than on other farms. Dairy farms had a higher calf crop percentage but a much smaller number of animals than beef farms. Beef cattle sales accounted for 87 per cent of all livestock sales on 105 farms; sales of beef cattle averaged $1,292 per farm and all livestock sales averaged $1,492 per farm.

FARM POWER

Horses.—Horses were used on all types of farm, either as a means of transportation to work on the range or as a source of power for working the land (Table 14). On the average, there was close to four horses per farm. Beef farms had the largest number, five; and part-time farms carried the lowest number, about two per farm.

Tractor Power.—A total of 107 tractors were used on the 105 farms (Table 15). Ten were 1-plow, 69 were 2-plow, 16 were 3-plow and there were 12

Table 14.—Average Number of Horses per Farm, by Farm Type, Rocky Mountain Trench, British Columbia, 1955

	Beef	Dairy	Mixed livestock	Mixed crop and livestock	Other crop and livestock	Off-type	Part-time	All farms
Number..........	5.1	3.8	3.8	4.1	3.0	2.4	2.1	3.7

Table 15.—Number and size of Tractors, Average Value and Average Cost of Operation, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Size	Number	Average value	Average cost of operation
1—plow	10	704	114
2—plow	69	928	155
3—plow	16	1,273	191
Other	12	2,078	197
Total	**107**	**1,246**	**164**

Table 16.—Number of Trucks, Size, Average Value and Average Operating Cost, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Number	Size	Average value	Average cost of operation to farm
59	half-ton	882	218
2	three-quarter-ton	914	246
20	one-ton	1,002	245
3	one and a half-ton	1,325	298
9	two-ton	408	361
1	two and a half-ton	300	16
14	three-ton	1,230	184
1	panel	316	311
Total 109		**797**	**235**

other types, including crawlers. The average value was $1,246 per tractor. The acreage cost of operation in 1955 was $114 for the 1-plow tractor, $155 for the 2-plow, $190 for the 3-plow and $197 for the other types and $164 per tractor for the 107 tractors.

Twenty-one farms had no tractors and 21 had two or more.

Truck Power.—Trucks numbered 119 (Table 16). The half-ton was most prominent, accounting for 50 per cent of the total. The average value was $791 and the average operating costs for the year amounted to $235 per tractor. Sixteen farms had no trucks.

Special Equipment.—There were 12 balers, 13 threshing machines and two combines; in addition to five power take-off balers and three power take-off combines (Table 17).

General Equipment.—The use of machinery and equipment varied according to the type of operation. Most farms had such equipment as plows, harrows, rakes and mowers, in sufficient quantity to cultivate, sow and harvest their

Table 17.—Other Special Equipment, Number, Type, Average Value, Average Operating Cost 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Type	Number	Average value	Average operating cost
Balers	12	1,522	82
Threshers	13	376	15
Combines	2	819	14
Balers P.T.O.	5	844	7
Combines P.T.O.	3	852	26

Table 18.—Average Number and Value, per Farm, of the Main Types of General Machinery and Equipment, According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

—	Beef		Dairy		Mixed livestock		Mixed crop and livestock		Other crop and livestock		Off-type		Part-time		All farms	
	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$
Dairy equipment	....	7	....	505	....	64	....	8	....	3	....	48	....	5	....	81
Clearing equipment	....	40	....	13	....	40	....	17	....	49	....	15	....	62	....	34
CULTIVATING EQUIPMENT																
Plows	1.0	150	1.0	193	0.8	97	0.8	134	0.5	50	1.1	96	0.6	65	1.0	120
One-way discs	0.1	7	0.2	46	0.2	49	0.2	28	0.3	132	....	....	....	....	....	28
Discs	1.0	89	1.0	95	0.8	67	0.8	75	0.5	32	1.0	101	0.8	48	1.0	75
Harrows	2.3	52	2.7	44	1.9	44	2.9	58	2.9	89	2.1	38	1.7	29	2.3	48
HARVESTING EQUIPMENT																
Mowers (all types)	1.2	145	1.3	168	1.1	90	1.3	171	0.8	155	1.0	152	1.0	113	1.1	141
Rakes (all types)	1.2	101	1.2	130	1.0	73	1.2	168	0.7	75	1.1	89	1.0	52	1.1	114
Harness and saddle	....	130	....	139	....	56	....	60	....	21	....	74	....	52	....	83
Irrigation equipment	....	320	....	181	....	444	....	160	....	374	....	400	....	284	....	296
Other general equipment[a]	....	796	....	1,106	....	669	....	1,197	....	2,249	....	836	....	620	....	941
Total	....	**1,837**	....	**2,620**	....	**1,693**	....	**2,076**	....	**3,229**	....	**1,849**	....	**1,330**	....	**1,961**

[a] Includes—Trailers, wagons, sleighs, tools, garden equipment, barrels, binders, chain saws, cultivators, electric fences, electric motors, fanning mills, fertilizer spreaders, grain grinders, hammer mills, seeders, hay making equipment, light plants, manure spreaders, drill and disc combination, packers and rollers, potato diggers and planters, and other potato equipment, seed drills and fertilizer attachments, gas engines, wagon boxes and racks, walking plows, water tanks and barrels, weed sprayers, wood saws and other miscellaneous equipment.

land. Dairy equipment was used almost exclusively on the dairy farms (Table 18). Equipment like potato planters and diggers were used by the "other crop and livestock" farms who grew potatoes as one of their main crops. Although investment in irrigation appeared to be fairly substantial in each group of farms most of the investment centered around two or three individual farms in each farm type.

The "other crops and livestock" farms had the highest average investment, in general equipment, $3,229, and were followed by the dairy farms with about $2,620 per farm. The part-time farms had the lowest average investment, $1,330 per farm. The average, for all farms, was $1,961 (Table 18).

The average annual cost of operation, per cultivated acre, was highest on the off-type farms at $9.26 per acre, and lowest on the beef farms, at $3.88 per acre (Table 19).

Table 19.—Average Annual Costs, per Cultivated Acre, for Operation of General Machinery and Equipment According to Farm Type, Rocky Mountain Trench, British Columbia, 1955

	Beef	Dairy	Mixed livestock	Mixed crop and livestock	Other crop and livestock	Off-type	Part-time	All farms
Repairs	61	78	39	40	49	23	26	46
Machine oil and grease	4	6	4	3	5	4	3	4
Depreciation	195	275	183	218	341	203	139	202
Interest on investment	93	131	87	104	162	97	66	83
Total costs	**353**	**490**	**313**	**365**	**557**	**327**	**234**	**335**
Cultivated acres	90.9	68.6	59.2	77.8	112.4	35.3	37.4	68.6
Cost per improved acre	3.88	7.14	5.29	4.69	4.96	9.26	6.26	4.88

LABOR RECORD

Productive man work units and man-equivalents were calculated and served in the analysis of efficiency in the use of labor. As indicated in Table 20, labor efficiency was highest on the "other crops and livestock" farms which had 401 productive man work units per man and lowest on dairy and off-type farms which had 248 and 232 work units per man, respectively.

The size of business, as measured by the number of productive man work units, was largest on the "other crops and livestock" farms and smallest on the part-time farms (Table 20).

Table 20.—Labor Record, by Farm Type, Rocky Mountain Trench, British Columbia, 1955

Farm type	Days of labor	Man equivalent	Productive man work units	P.M.W.U. per M.E. or labor efficiency
Beef	361	1.16	404	348
Dairy	465	1.49	370	248
Mixed livestock	330	1.06	294	277
Mixed crop and livestock	334	1.07	284	265
Other crop and livestock	374	1.20	481	401
Off-type	266	.85	197	232
Part-time	151	.48	124	258
All farms	**324**	**1.04**	**302**	**290**

Table 21.—Average Months of Labor Required per Farm, According to Farm Type, Rocky Mountain Trench, British Columbia, 1955

Farm type	Total months of labor	Operator's labor	Hired labor	Family labor
	—months—			
Beef	14.4	9.7	1.9	2.8
Dairy	18.6	10.3	3.3	5.0
Mixed livestock	13.2	9.3	1.4	2.5
Mixed Crop and livestock	13.4	8.2	0.9	4.2
Other crop and livestock	15.0	8.9	3.5	2.6
Off-type	10.6	7.9	0.2	2.5
Part-time	6.0	3.6	0.2	2.3
All farms	**13.0**	**8.3**	**1.5**	**3.2**

On the average a farm utilized about 13 months of labor (Table 21). On the average, dairy farms required the largest amount of labor, close to 19 months per farm and part-time farms required the lowest amount, about six months.

The use of hired labor was moderate on all types of farms, being highest on the "other crops and livestock" farms, with an average of 3.5 months per farm per year. Dairy farms required an average of 3.3 months. The average, for all farms, was 1.5 months of hired labor.

Family labor ranged from a low of 2.3 months on the part-time farms to about five months on the dairy farms. The average for all farms was 3.2 months of family labor.

The operators of dairy farms generally contributed more labor—an average of 10.3 months a year per farm—than operators of other types of farms, and the part-time farmers supplied the smallest amount—an average of 3.6 months. The average for all types of farms was 8.3 months.

PRODUCTIVITY OF CAPITAL IN WHEAT PRODUCTION ON THE GRAIN FARMS IN SASKATCHEWAN

J. K. Wiens

Some of the most striking developments in Saskatchewan agriculture in the last two decades include a marked trend towards the reduction in numbers and an increase in the size of farms, an accelerated rate of farm mechanization and a decrease in the use of hired and family labor, and a consequent and rapid growth in the average amount of capital invested per farm and per farm worker.

These trends are particularly evident in the prairie areas of the province. The number of one and two-section farms has decreased considerably and the number of three-section farms has also declined slightly although it has fairly well maintained its rank as a proportion of the total number of farms. On the other hand, the number of larger farms has increased, both in absolute terms and as a proportion of the total. (Table 1). In the park area the number of one and two-quarter section farms has decreased but the number of larger farms has risen.

The value of the machinery component has increased. Most farms have newer and also a fuller line of machines[1]. Farmers, on the other hand, are

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[1] Stutt, R. A., *Changes in Farm Organization on Grain Farms on Heavy and Medium Textured Soils of the Dark Brown Soil Zones of Saskatchewan, 1939 to 1944 and 1954. The Economic Annalist,* Vol. XXVI, No. 4, August 1956.

Table 1.—Distribution of Farms by Size, Prairie area of Saskatchewan, 1941-1956[a]

Size of farm in quarter sections	1941		1946		1951		1956	
	Per cent of total	Cumulative total	Per cent of total	Cumulative total	Per cent of total	Cumulative total	Per cent of total	Cumulative total
1	17.3	....	15.1	....	8.1	....	7.2	....
2	34.5	51.8	31.1	46.2	23.2	31.3	20.1	27.3
3	17.8	69.6	18.3	64.5	20.0	51.3	18.3	45.6
4	....	....	....	....	18.9	70.2	19.1	64.7
5 and 6	....	....	....	....	16.8	87.0	19.1	83.8
7–9	....	....	....	....	8.2	95.2	10.0	93.8
10–13	....	....	....	....	2.8	98.0	3.6	97.4
14–17	....	....	....	....	.9	98.9	1.1	98.5
18 and over	....	100.0	....	100.0	1.1	100.0	1.5	100.0

[a] Census of Canada.

making less use of family and hired labor. These two trends, although opposite in direction, are interrelated. Additions to the machinery and equipment component lead to a reduction in labor expense and lighten the labor load for the farmer and his family. The operator seldom "lays himself off" but the hired workers are either displaced or retained because of their capacity to operate a larger business.

Farm Costs.—On Regina heavy clay (high productivity) soils, total farm costs on a half section (320 acres) farm, in 1954, averaged about $5,700 per farm. On Weyburn loam (medium productivity) soils, they averaged about $4,800 per farm (Table 2). On a per acre basis this amounted to $18.45 and $15.61 for high and medium productivity soils, respectively. There was a marked difference in total costs per cultivated acre between the two soil productivity levels on half-section, one-section, and two to three-section farms. This difference stemmed chiefly from differences in real estate costs, which consist of capital charges for buildings and land, taxes, and building upkeep and depreciation. Costs, for machinery and equipment, were about the same for high and medium productivity soils on half-section and one-section farms. On larger farms, however, these costs averaged $5,890 per farm on high productivity soils compared with $4,730 on medium productivity soils. The lower costs, on the latter soils, reflect the lower investment, per cultivated acre, in machinery and equipment.

On half-section and section farms, labor costs were lower on medium than on high productivity soils. On larger farms, on the other hand, labor costs were higher on medium than on high productivity soils; they averaged $4,429 per farm on the former compared with $3,597 per farm on the latter type of soil. By adding machinery and equipment costs to labor costs, on the larger farms, one may note the offsetting effects of the substitution of one type of costs for another; the aggregate figures are $9,487 for the high productivity and $9,159 for the medium productivity soils, a difference of only $328.

The influence of size (acreage) on costs becomes quite evident when one examines the figures on average costs per acre in Table 2. For each of the two productivity levels, average costs decreased with an increase in size of farm.

Farm Income.—There are many conventional measures of farm income, the most common being: a) farmer's labor income; b) operator's labor and management earnings; c) capital return; and d) management return. These measures are not designed to indicate the actual money or expendable income of a farm but to provide comparisons of relative success among different farm units. For our purpose, which is to determine the debt or loan-repayment capacity of a farm, another measure must be devised. This measure, or method, is based on estimates of income to be derived from farm production over a long period.

For example, if consideration is only given to gross returns per cultivated acre, on Regina heavy clay farms, according to land use in 1954 and average yields from 1951 to 1954, the estimated average is $18.24, $19.00 and $17.63 for the small, medium and large farms, respectively. These variations in estimates reflect variations in land use in 1954. Had figures on crop yields covered a few more years, variations might have been different in size and direction. Indeed, the larger gross income per acre, on the section farms, was largely derived from a much higher acreage in summerfallow crops than in summerfallow, compared with smaller as well as larger farms; this situation can be only of a temporary character.

Table 2.—Typical expenses on Small, Medium and Large Prairie Wheat Farms, Saskatchewan, 1954 [a]

	Soil Productivity[b]			
	High	Medium	High	Medium
	—dollars per farm—		—dollars per acre—	
Half-section farms (320 acres)				
Real estate[c]	1,482	707	4.78	2.29
Machinery and equipment[d]	1,988	2,030	6.41	6.57
Labor[e]	1,917	1,829	6.19	5.92
Other	332	258	1.07	0.83
Total	**5,719**	**4,824**	**18.45**	**15.61**
One-section farms (640 acres)				
Real estate	2,738	1,397	4.52	2.34
Machinery and equipment	3,453	3,494	5.71	5.85
Labor	2,533	1,800	4.19	3.02
Other	557	391	0.92	0.65
Total	**9,281**	**7,082**	**15.34**	**11.86**
Two to three-section farms				
Real estate	6,666	3,076	4.71	2.18
Machinery and equipment	5,890	4,730	4.16	3.36
Labor	3,597	4,429	2.54	3.14
Other	1,090	1,004	0.77	0.71
Total	**17,243**	**13,239**	**12.18**	**9.39**

[a] Gilchrist, V. *Changes in Farm Organization on Prairie Grain Farms.* Report on 1954 Phase of Study, Unpublished Report.

Economics Division, Canada Department of Agriculture, Saskatoon, Saskatchewan.

[b] Regina heavy clay soils represent high productivity and Weyburn loam the medium productivity soils in the wheat areas of Saskatchewan.

[c] Includes taxes, capital cost allowances of 5 per cent and depreciation and repair for all farm buildings, excluding the farm house.

[d] Includes all costs involved in the upkeep, financing and operation of machinery and equipment.

[e] Includes hired and family labor and operator's labor of $1,800 based on 12 months at approximately the hired wage without board for Saskatchewan in 1954.

To make the necessary adjustments for such a situation and to have a gross income figure covering a longer period of time we have determined what had been the average type of land use on the farms included in our study. Average yields, over different periods, for the rural municipalities in which our farms were located, were then used to estimate gross income.

On the basis of average yields for the 1918-55 period, gross income averaged $12.84 per cultivated acre. On the basis of yields in 1940-55, gross income averaged $14.87 per cultivated acre of Regina heavy clay soils. This figure,

$14.87, was multiplied by the number of cultivated acres to estimate the average gross income for each group of farms. Gross income from Weyburn loam soils, also on the basis of average yields in 1940-55, averaged $10.73 per cultivated acre.

The income remaining after deducting all expenses, except operator's labor and management and capital charges, is the income available for living expenses, debt repayments, and savings. According to a study made in 1942[1] farm family living costs in west central Saskatchewan then averaged about $1,400 per family. Adjusting this figure to the price level and other conditions prevailing in 1954, living costs in that year can then be estimated at about $2,400 per farm family. The income balance remaining, after deduction of this figure, is what is left for saving and debt servicing—or an average of −$363, $1,765 and $9,141 on the small, medium and large farms, respectively, of the Regina heavy clay group, and an average of—$1,208, $363 and $4,485 for the corresponding sizes of farms of the Weyburn loam group.

Other data were obtained from a study of the organization of farms on Sceptre heavy clay soils in the Brown soil zone of Saskatchewan in 1955[2]. On these farms the average amounts remaining for savings and the servicing of debts, for the three size groups, were—$800, $1,150 and $6,605 respectively. In both examples, there was no income left for savings or debt servicing on the half-section farms. This deficit was probably overcome or at least minimized by either lowering levels of living; securing income from other farm enterprises, such as livestock; custom work; or part-time employment off the farm.

Table 3.—Amount of Loan that Annual Farm Surplus will repay at different Interest Rates and different Time Periods

Farm size (Qtr. sec.)		Soil Type					
		Regina Heavy Clay		Weyburn Loam		Sceptre Heavy Clay	
		4	8–12	4	8–12 —	4	8–12
Time period —years—	Interest rate — per cent—		— loan value in dollars —				
10	2	15,854	82,110	3,261	40,287	10,330	59,330
	4	14,316	74,142	2,944	36,377	9,328	53,572
	6	12,990	67,278	2,672	33,010	8,464	48,613
20	2	28,860	149,467	5,936	73,341	18,804	108,000
	4	23,987	124,230	4,933	60,953	15,629	89,765
	6	20,244	104,485	4,164	51,443	13,190	75,756
30	2	39,530	204,727	8,130	100,449	25,756	147,929
	4	30,520	158,064	6,277	77,555	19,886	114,215
	6	24,295	125,825	4,997	61,735	15,830	90,919
40	2	48,282	250,054	9,930	122,689	31,459	180,684
	4	34,934	180,924	7,185	88,773	22,761	130,727
	6	26,557	137,540	5,462	67,485	17,303	99,379
Capital investment per farm............		52,994	118,859	32,792	63,909	37,015	66,007

Loan Repayment Capacity.—The income left for savings and debt servicing may be used to repay loans. Its repayment capacity would depend largely on the loan rate of interest and the repayment period. Table 3 was organized for the purpose of illustrating this loan repayment capacity.

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[1] Edwards, F. M., H. E. Elliott, and H. M. Turnbull, *Level of Living of Farm Families in Representative Areas of Western Canada, 1942.* Unpublished Report. Economics Division.

[2] Zeman, J., V. Gilchrist and H. D. McRorie, *Changes in Farm Organization on Prairie Grain Farms on Sceptre Heavy Clay Soil of the Brown Soil Zone, 1955.* Unpublished Report. Economics Division.

On the section farms as a group, no matter the type of soil, this income would not be large enough to enable farmers to repay their capital investment even in 40 years at two per cent interest. For all the groups of large farms, the loan repayment capacity would be adequate, with a 40-year repayment period and even at a six per cent interest rate. For the same group of farms, with a six per cent interest rate, the total investment could be repaid in 34 years on Weyburn loam soils, 26 years on Regina heavy clay soils, and 16 years on Sceptre heavy clay soils.

These data indicate that when farms in the prairie area of Saskatchewan are organized for wheat production only, the size of a farm unit has a definite bearing on returns to the operator's labor and capital. For returns that would provide an annual wage of $1,800, even if a farm requires only about seven months of the operator's time[1] [2] and a return on investment of about five per cent, a farm unit of at least one section is needed on Weyburn loam soil and a half section on Regina heavy clay soil.

PUBLICATIONS OF THE ECONOMICS DIVISION

Directory of Farmers' Organizations and Marketing Boards in Canada, 1958. Compiled by Constance M. Jones. Ottawa, June 1958. pp. 28.

In 1955, 1956 and 1957 the Economics Division published a *Directory of Farmers' Organizations in Canada*. The 1958 edition of this Directory is enlarged by the addition of a section on marketing boards-federal and provincial.

Abstract of Canadian Provincial Legislation on Co-operatives. Ingersoll, H. K. Ottawa, June 1958. pp. 51.

An abstract "prepared at the request of the Interprovincial Conference on Co-operatives meeting in Ottawa in 1956" and "designed to provide easy access to the content of co-operative legislation in force in the various provinces."

Canada—Production, Trade and Prices for Principal Agricultural Products, 1925-1957. Ottawa, July 1958. pp. 45.

A series of 28 statistical tables on production, supply, trade and prices of some of Canada's principal agricultural products.

Canada's Share of the United Kingdom's Agricultural Imports. Ottawa, July 1958. pp. 53.

This report includes a series of 52 statistical tables on the United Kingdom's imports of selected agricultural products. Figures relate to imports from all countries, imports from Canada, and imports from Canada as a percentage of the total.

The Use of Aircraft in Canadian Agriculture, 1957. Philpotts, L. E. Ottawa, July 1958. pp. 18.

A report on the use of aircraft in 1957 for commercial and private agricultural spraying, land supervision, farm transportation, and recreational and social purposes.

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[1] Ibid.

[2] Gilchrist, V., *Changes in Farm Organization on Prairie Grain Farms*—Report on 1954 Phase of the Study. Unpublished Report. Economics Division.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

MARKETING SERVICE, ECONOMICS DIVISION
J. F. BOOTH, Chief

DECEMBER 1958 **Vol. XXVIII No. 6**

CONTENTS

Page

The Economic Situation 123

The Farm Business in the Rocky Mountain Trench of British Columbia — Part II .... *D. C. Crossfield* 126

Farm Organization in the Red River Valley, Manitoba, 1957 .... *T. O. Riecken* 133

Research in Consumption Economics 1953-1958 .... *L. E. Drayton* 138

Publications of the Economics Division 142

Other Publications 142

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ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
		1935–39=100						1949=100		1935–39=100
1913	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	85.6
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	94.6
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	108.0
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	102.0
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	109.7
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	131.4
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	164.8
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	195.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	208.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	212.4
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	187.2
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	171.9
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	187.8
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	196.3
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	199.6
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	211.5
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	226.5
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	233.0
1953	220.7	221.6	179.4	263.8	250.4	234.8	207.4	115.5	112.6	248.4
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	244.6
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	265.8
1956	225.6	214.2	181.6	246.9	234.5	247.6	208.8	118.1	113.4	284.4
1957	227.4	210.8	163.6	258.0	231.0	255.8	211.3	121.9	118.6	284.0
1958	....	....	....	....	....	....	....	....	....	....
1958										
Jan	226.8	208.4	157.5	259.3	226.3	251.2	212.2	123.4	119.4	276.2
Feb	227 7	214.0	159.6	268.4	231.5	....	....	123.7	119.9	277.3
Mar	228.1	220.6	168.3	272.9	237.1	....	....	124.3	121.3	275.7
April	227.9	222.7	165.5	279.9	240.6	262·7	213.1	125.2	123.4	278.5
May	228.1	223.1	157.8	288.3	244.7	....	....	125.1	122.7	279.0
June	227.4	221.1	155.9	286.4	242.7	....	....	125.1	122.7	279.9
July	227.0	219.4	159.4	279.3	241.6	....	....	124.7	121.4	279.3
August	226.8	215.9	156.5	275.2	238.5	....	....	125.2	122.6	275.6
Sept	227.1	211.1	155.2	266.9	236.1	....	....	125.6	122.9	277.7
Oct	226.9	211.8	154.4	269.3	....	....	....	126.0	123.4	....
Nov	228.6	212.7	155.1	270,2	....	....	....	126.3	123.2	....
Dec	....	....	....	....	....	....	....	....	....	....

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1956—July 1957 include final barley and wheat payments announced June 11, 1958.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION—1958

Year-End Review[1].—The Canadian economy levelled off during 1957 after two years of very rapid expansion. The export demand for Canadian goods slackened as economic activity slowed down in Western Europe and began to decline in the United States. At the same time much of the increase in Canada's industrial capacity, planned in the two previous years, had recently come or was coming into operation. As excess capacity developed in a number of industries, business investment tapered off, particularly in those industries related to the development of natural resources. Also toward the end of 1957, the sales position over a wide segment of industry led to a drawing down of inventories which in turn had an adverse effect on new orders and current production. These influences were offset to some extent by the steady rise in consumer spending and in the last half of the year by the sharp increase in residential construction and government expenditure but economic activity continued to decline until at least the end of the year. During the winter months of 1957-58 the number of unemployed persons in Canada rose well above the levels of previous years.

Economic activity in Canada steadied in the first quarter of 1958 and since then national output has increased moderately. In the second quarter of this year, the Gross National Product, that is the value of Canada's total output of goods and services, reached a seasonally adjusted annual rate of $32.25 billion.

By mid-1958, the total index of industrial production (seasonally adjusted) was three per cent higher than at the end of 1957 and only four per cent below the peak reached in February 1957. Production has shown improvement from year-end levels in most major manufacturing industries.

Investment.—Capital outlays in 1958 have changed little in over-all volume, though they have been substantially different in composition from those of 1957. The mid-year survey of investment intentions indicated that capital expenditure was expected to reach $8.5 billion, down two per cent from that of 1957 but still higher than any previous year. While capital spending by the business community in the first six months of 1958 has been below that of the corresponding period of 1957, capital expenditures on housing and other forms of social capital have been significantly greater than in 1957. In the latter part of 1957, housing activity rose sharply with the aid of government funds and this high rate of residential construction has extended into 1958. For the year as a whole, it is expected that new housing starts will reach 150 thousand units compared with 122 thousand starts in 1957.

Income.—Unlike capital expenditure consumer spending under the influence of a high level of personal income, has continued to increase in 1958 and to be as it was in 1957 a strong support to the economy. In the first half of this year, personal income totaled six per cent more than in the corresponding period in 1957. Basic wage rates have continued to increase, and investment income to persons, in the form of interest, dividends and rentals has been greater this year in spite of lower corporate profits. However almost half of the increase in personal income in the first six months of this year over the first six months of 1957 has been attributable to transfer payments from government to persons in the form of greater unemployment insurance payments, increased family allowances, old age security and veterans payments.

Agricultural Income.—Cash farm income is higher than a year ago. Estimates available for the first six months of 1958 indicate a cash farm income of $1.3 billion, a gain of about nine per cent over that total for the same period in 1957. This is also higher than the figure for 1956. Income rose in every province. The gain in income from sales of livestock and livestock products more than offset the decline in returns from yield crops. This was most apparent in the Prairie Provinces where income from the sale of livestock and its products showed an increase of 27 per cent.

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[1] From a review of the economic situation prepared by the Domestic and International Situation Committee of the 1958 Federal-Provincial Agricultural Conference.

Agricultural Prices.—Annual averages of wholesale prices of Canadian farm products remained relatively stable over the period 1954 to 1957 although the average for 1957 was the lowest for the ten-year period 1948-57. During the first seven months of 1958 there was a slight improvement in wholesale farm prices over the same period in 1957. A review of the components making up the wholesale price index shows that over the past 18 months field crop prices have tended to weaken, whereas animal product prices have shown strength, especially during the first seven months of this year. Prices at the farm level have also been relatively stable since 1955. The upward movement of farm prices which began in November 1957 continued through May 1958. However, farm prices moved downward slightly in June and July. Nevertheless since March of this year prices have been above those in the comparable period of 1957. Prices of commodities and services, used by farmers, especially farm machinery and to a lesser degree fertilizers, have also increased.

External Trade.—While some areas of domestic demand have shown improvement during the first half of this year the general position of the Canadian export trade has remained stable. However, imports have fallen noticeably. This pattern of trade in 1958 has meant that at the end of seven months Canada's balance of trade was considerably improved compared with the preceding year, particularly so with the United States. At the end of July the Canadian merchandise trade deficit with the United States was $491 million compared with $820 million at that date in 1957.

The competitive position of the more important Canadian farm products or major world markets, with the exception of the United States, has weakened over the past two years. Prices of such products as cattle, hogs, butter, cheese and eggs have shown greater strength in Canada than in Western Europe.

Although international markets were affected by the uncertainties as to the effect of world trade of the United States recession, the fall in import demand was not on the whole due to weaker consumer demands. Indeed, for several commodities (grains, dairy products, coffee, cotton, some forest products) it undoubtedly reflects the fact that the world-wide expansion in productive capacity over the past ten years has outstripped, for the moment, the long-term growth in world demand. Export disposal policies have allowed market prices to reflect the world supply position to a greater extent than in earlier years for commodities such as cotton and dairy products.

Disposal of Agricultural Surpluses.—The agricultural surplus problem remains far from solution. This problem has been discussed by the FAO, the OEEC, ECOSOC and many other international groups. Proposals to remedy the situation have been put forward and are under review. North American stocks are still immense. Surpluses of dairy products have become increasingly serious in Europe. Stocks of butter accumulated in Sweden, Finland and Ireland were sold at subsidized prices in the United Kingdom, the only market without quota restrictions on butter imports. This problem of surpluses has spread to coffee in Latin America. Although the total volume of trade moving under special terms probably has been smaller in 1957-58, reflecting the decline in over-all United States activity, a larger number of countries have had to resort to export subsidies or other concessions to reduce surplus stocks.

International Trade Policies.—During the summer of 1958 the United States Congress re-enacted the trade agreements program for a further four years authorizing the Administration to enter into tariff negotiations and to reduce tariffs by 20 per cent of present levels. The Administration has stated its intention of seeking negotiations with the European countries which are in the process of forming a Common Market.

The President has vetoed a bill passed by Congress which would have seriously interrupted the valuable Canadian export trade with the United States in certified seed wheat.

On the other hand, the United States announced that effective October 1, imports of lead and zinc would be placed under quota. The quota will restrict imports of all forms of lead and zinc to 80 per cent of the average net imports into the U.S.A. during the five-year period 1953-57. This action by the United States will affect not only Canadian trade but will also have immediate repercussions on the dollar-earning capacity of Australia, Mexico, Peru, South Africa and other supplier-countries.

In accordance with stated policies the United Kingdom is proceeding with the removal of controls on dollar imports. Grains and grain products were freed from import control in August 1957. During 1958 the United Kingdom has freed additional commodities such as chemicals and allied products, industrial, agricultural and office machinery, newsprint and canned salmon. There have been additional relaxations on agricultural products. Thus fresh, canned and dried fruits are now to be admitted under quotas which have been set up to cover the whole dollar area. The items of particular concern to Canadian exporters are fresh pears, peaches, apricots and plums, dried fruits (including apples), fruit juices, canned apples, peaches, pears, apricots, fruit salad, cherries and others. A northern hemisphere allocation for fresh apples has replaced specific dollar allocations thus enabling Canada to compete for a larger share of the United Kingdom market. At the Commonwealth Trade and Economic Conference the United Kingdom announced its hope of making a start next year in freeing the remaining foodstuffs and other consumer goods.

As a result of various measures of liberalization a large proportion of Canadian exports to Commonwealth countries are either free of restriction or where restrictions do exist they are often of a non-discriminatory nature. Canada's export trade to sterling countries now faces fewer restrictions than at any time during the last few years. In addition it was agreed at the Commonwealth Trade and Economic Conference that, "Commonwealth countries should endeavor as soon as possible to remove discrimination in trade in the form of quantitative restrictions between themselves".

Although in Western Europe the average level of economic activity was still higher in 1957 than a year earlier, in a number of countries end-year output fell below the beginning year rate, and burdensome surpluses and excess capacity appeared in 1958. The recession in the United States had little actual effect on European countries but it apparently has lent caution to further liberalization measures. The establishment of the European Common Market, and work towards a Free Trade area, appear to have been additional factors working towards a slowing down of liberalization. In fact, they may have had a bearing in creating certain new protective measures in the agricultural sector, which however are not in the form of quantitative import restrictions.

CORRIGENDA

Darcovich, W., in *The Use of Production Functions in the Study of Resource Productivity in Some Beef Producing Areas of Alberta*, Aug. 1958 issue, page 87, paragraph 3, line 7, "784" should read "261", and "261" should read "784"; line 12, "as the amount of land used decreases" should read, "as the amount of land used increases", and in line 13, "784" should read "261", and "261" should read "784". On page 88, table 3, "784 (1.5 mean)" should read "261 (0.5 mean)", and "261 (.05 mean)" should read "784 (1.5 mean)"; also, "land and capital at:—" should read "labor and capital at:—".

THE FARM BUSINESS IN THE ROCKY MOUNTAIN TRENCH OF BRITISH COLUMBIA—PART II[1]

D. C. CROSSFIELD

FARM RECEIPTS AND EXPENSES

Total receipts averaged $6,320 per farm and total expenses $4,972 per farm (Tables 1 and 2). Family farm income thus averaged $1,348 per farm. "Other crops and livestock" farms had the highest average total expenses, $11,607 per farm, and the highest receipts, $17,526 per farm. Dairy farms had the second highest average returns, $10,291, and their expenses averaged $7,568 per farm. The beef farms were third; their total receipts averaged $6,140 per farm and their expenses $4,507 per farm. The part-time farms had the lowest receipts and expenses; $1,954 and $2,409 per farm respectively.

Table 1.—Average Total Current Receipts, Capital Receipts, and Inventory Increases, According to Farm Type 105 Farms, Rocky Mountain Trench, British Columbia, 1955

—	Beef	Dairy	Mixed livestock	Mixed crop and livestock	Other crop and livestock	Off-type	Part-time	All farms
				—dollars—				
Total current receipts	3,677	6,192	2,630	2,577	10,477	1,928	726	3,391
Capital receipts								
Land	—	85	—	250	—	—	16	60
Buildings	—	—	—	—	—	—	—	—
Special equipment	163	404	143	75	183	65	159	164
General equipment	4	—	—	18	21	—	1	6
Total capital receipts	167	489	143	343	204	65	176	230
Inventory increases								
Land purchases	—	—	83	540	—	540	—	167
Land improvements	278	216	166	266	153	230	78	209
Buildings purchases	—	—	—	92	—	—	—	18
New buildings and improvements	141	632	255	550	2,795	419	106	470
Special equipment purchases	490	1,347	435	432	728	937	393	618
General equipment purchases	227	253	266	226	385	369	126	243
Crop inventory	255	147	370	460	1,282	172	98	325
Livestock inventory	805	851	444	444	1,498	269	237	589
Purchases, feeds, etc	100	164	30	39	4	26	14	60
Total inventory increases	2,296	3,610	2,049	3,049	6,845	2,962	1,052	2,699
Total receipts	**6,140**	**10,291**	**4,822**	**5,969**	**17,526**	**4,955**	**1,954**	**6,320**
				—per cent—				
Current receipts as a percentage of total receipts	60	60	55	48	60	39	37	53
Capital receipts as a percentage of total receipts	3	5	3	6	1	1	9	4
Inventory increase as a percentage of total receipts	37	35	42	51	39	60	54	43

Livestock sales contributed the most to farm current receipts, an average of $1,492 per farm or 44 per cent of all current receipts. Whole milk sales accounted for $628 or 20 per cent of all receipts. Livestock expense was the largest single item of current expenses, averaging $1,024 per farm and accounting for 44 per cent of all current expenses. Egg sales returned, on the average, 13 per cent of total receipts, other farm products 12 per cent, crop sales nine per cent and custom work two per cent (Table 5).

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[1] See the December 1957 issue for an article on *"Farming in the Rocky Mountain Trench of British Columbia"* and the October 1958 issue for Part I of *"The Farm Business in the Rocky Mountain Trench of British Columbia"*.

Sales of livestock and livestock products accounted for 77 per cent of average current receipts.

Machinery expenses represented 25 per cent and labor 11 per cent of total current expenses.

Purchases of special equipment were the largest single item of capital expenses, making up 40 per cent of the total.

A balance of $1,076 was left, by subtracting current expenses from currents receipts. Sixty-eight per cent of the current receipts were used up in current expenses.

Dairy farms had a low of 58 per cent of the current receipts used as current expenses whereas part-time farms had current expenses exceeding current receipts by 21 per cent (Table 7).

Table 2.—Average Total Current Expenses, Inventory Decreases and Capital Expenses, According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

—	Beef	Dairy	Mixed live-stock	Mixed crop and live-stock	Other crop and live-stock	Off-type	Part-time	All farms
	—dollars—							
Total current expenses	2,514	3,606	1,774	1,950	6,702	1,418	881	2,315
Capital expenses								
Land purchases	—	—	83	540	—	540	—	167
Land improvements	143	98	92	150	123	134	35	112
Building purchases	—	—	—	92	—	—	—	18
New buildings and improvements	85	575	160	472	2,668	299	86	399
Special equipment purchases	490	1,347	435	432	728	936	393	618
General equipment purchases	227	253	266	226	385	369	126	243
Total capital expenses	945	2,273	1,036	1,912	3,904	2,278	640	1,557
Inventory decreases								
Land sales	—	84	—	165	—	—	8	43
Building sales	—	—	—	—	—	—	—	—
Building depreciation	148	306	173	183	185	164	157	183
Special equipment sales	162	404	143	75	184	65	159	164
Special equipment depreciation	256	284	167	174	233	182	124	202
General equipment sales	4	—	—	17	21	—	1	6
General equipment depreciation	195	275	183	218	341	203	139	208
Crop inventory	108	95	76	118	—	57	141	97
Livestock inventory	144	222	128	305	32	76	157	171
Purchased feeds, etc	31	19	49	29	5	31	2	26
Total inventory decrease	1,048	1,689	919	1,284	1,001	778	888	1,100
Total expenses	**4,507**	**7,568**	**3,729**	**5,146**	**11,607**	**4,474**	**2,409**	**4,972**
	—per cent—							
Current expenses as percentage of total farm expenses	56	48	48	40	58	32	37	47
Total capital expenses as a percentage of total expenses	21	30	28	37	34	51	27	31
Total inventory decrease as a percentage of total expenses	23	23	25	25	9	17	37	22

FINANCIAL RETURNS

Family Farm Income.—All but the part-time farms had a positive family farm income. The "other crops and livestock" farms had the largest family farm income $5,918 and the off-type farms the smallest, $481. The average, for all farms, was $1,348 per farm (Table 8).

Operator's Labor Income.—Operator's labor income is calculated by subtracting the interest on total investment and the value of unpaid family labor from the family farm income. Only two types of farm, the "other crops and livestock" and the dairy farms had a positive operator's labor income (Table 8). The "other crop and livestock" farms had an average positive balance of $3,627 per farm and the dairy farms one of $363 per farm. The other farm types ranged from a negative value of $460 for the beef type to a $1,664 for the part-time type. The over-all average was $487 per farm.

Table 3.—Average Current Receipts, According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Farm type	Crop	Live-stock	Sales of whole milk	Sales of eggs	Sales of other farm products	Custom work	Total
				—value—			
Beef	79	3,053	—	52	463	30	3,677
Dairy	76	892	4,593	105	238	288	6,192
Mixed livestock	122	1,331	569	162	394	52	2,630
Mixed crop and livestock	645	1,234	13	123	522	40	2,577
Other crop and livestock	2,260	1,588	—	6,109	520	—	10,477
Off-type	44	733	—	116	901	134	1,928
Part-time	84	562	3	26	49	2	726
All farms	**315**	**1,492**	**658**	**437**	**418**	**71**	**3,391**

Table 4.—Average Current Expenses, According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Farm type	Crop	Livestock	Machinery	Labor	Others	Total
			—value—			
Beef	243	993	659	303	316	2,514
Dairy	149	1,902	857	432	266	3,606
Mixed livestock	119	717	485	202	251	1,774
Mixed crop and livestock	175	640	578	181	376	1,950
Other crop and livestock	596	3,983	648	874	601	6,702
Off-type	122	548	469	38	241	1,418
Part-time	83	331	304	30	133	881
All farms	**184**	**1,024**	**569**	**246**	**292**	**2,315**

Table 5.—Percentage Distribution of the Various Sources of Current Receipts, According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Farm type	Crop	Live-stock sales	Sales of whole milk	Sale of eggs	Sale of other farm products	Custom work	Total
	—percentages—						
Beef	2.1	83.0	0	1.4	12.6	1.0	100
Dairy	1.2	14.4	74.2	1.7	3.8	4.7	100
Mixed livestock	4.6	50.6	21.6	6.2	15.0	2.0	100
Mixed crop and livestock	25.0	47.9	.5	4.8	20.2	1.6	100
Other crop and livestock	21.6	15.2	—	58.3	5.0	—	100
Off-type	2.3	38.0	—	6.0	46.7	7.0	100
Part-time	11.6	77.4	.4	3.6	6.7	.3	100
All farms	**9.3**	**44.0**	**19.5**	**12.9**	**12.3**	**2.1**	**100**

Table 6.—Percentage Distribution of the Various Sources of Expenses, According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Farm type	Crop	Livestock	Machinery	Labor	Others	Total
	—percentages—					
Beef	9.7	39.5	26.2	12.1	12.5	100
Dairy	4.1	52.7	23.8	12.0	7.4	100
Mixed livestock	6.7	40.4	27.3	11.4	14.2	100
Mixed crop and livestock	9.0	32.8	29.6	9.3	19.3	100
Other crop and livestock	8.9	59.4	9.7	13.0	9.0	100
Off-type	8.6	38.6	33.1	2.7	17.0	100
Part-time	9.4	37.6	34.5	3.4	15.1	100
All farms	**8.0**	**44.2**	**24.6**	**10.6**	**12.6**	**100**

Table 7.—Average Current Farm Receipts and Expenses, According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Farm type	Average current receipts	Average current expenses	Receipts over or under expenses	Percentage expenses were of receipts
				—per cent
Beef	3,677	2,514	1,163	68
Dairy	6,192	3,606	2,586	58
Mixed livestock	2,630	1,774	856	67
Mixed crop and livestock	2,577	1,950	627	76
Other crop and livestock	10,477	6,702	3,775	64
Off-type	1,928	1,418	510	74
Part-time	726	881	−155	121
All farms	**3,391**	**2,315**	**1,076**	**68**

Table 8.—Average Financial Summary, Family Farm Income, Operator's Labor Income, and Operator's Earnings, According to Farm Type, Rocky Mountain Trench, British Columbia, 1955

Farm type	Beef	Dairy	Mixed livestock	Mixed crop and livestock	Other crop and livestock	Off-type	Part-time	All farms
	—dollars—							
Farm receipts	5,092	8,601	3,904	4,685	16,525	4,177	1,066	5,220
Farm expenses	3,459	5,879	2,811	3,862	10,607	3,696	1,520	3,872
Family farm income	1,633	2,722	1,093	823	5,918	481	−454	1,348
Interest on capital	1,550	1,407	1,123	1,094	1,798	1,013	770	1,225
Value of unpaid family labor	543	952	481	812	493	474	440	610
Operator's labor income	−460	363	−511	-1,083	3,627	-1,006	-1,664	-487
Perquisites:								
Value of farm produce consumed	439	519	597	633	513	626	392	525
Use of house	165	257	214	178	300	188	211	204
Operator's labor earnings	144	1,139	300	-272	4,440	-192	-1,062	242

Table 9.—Distribution of Operator's Labor Income and Operator's Labor Earnings, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Dollar range	Labor income	Labor earnings	Dollar range	Labor income	Labor earnings
	—number of farms—			—number of farms—	
3,000 and over	3	9	− 1 to -499	17	12
2,500 to 2,999	2	3	-500 to -999	10	14
2,000 to 2,499	4	4	-1,000 to -1,499	13	6
1,500 to 1,999	5	4	-1,500 to -1,999	9	6
1,000 to 1,499	5	10	-2,000 to -2,499	6	6
500 to 999	5	10	-2,500 to -2,999	3	2
0 to 499	12	15	-3,000 to -3,499	5	2
			-3,500 and below	6	6
Total	**36**	**55**	**Total**	**69**	**50**

Table 10.—Off-Farm Income Reported, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Item	Amount
	—dollars—
Christmas trees	26,600
Mining	13,217
Logging and lumbering	11,234
Trucking	6,332
Mill work	4,500
Other	23,773
Total	85,656

Table 11.—Sales of Christmas Trees by Farmers, Rocky Mountain Trench, Canal Flats to 49th Parallel, British Columbia, 1946-54

Year	Trade in trees	Total value	Price to farmer
		—dollars—	
1946	600,200	138,046	.40 per bundle
1947	381,500	64,855	.40 “ “
1948	580,000	116,000	.90 “ “
1949	444,766	89,023	.75 “ “
1950	462,014	161,705	1.30 “ “
1951	377,578	245,425	1.25 “ “
1952	466,892	163,323	1.25 “ “
1953	509,105	218,915	1.20 “ “
1954	720,944	295,587	1.15 “ “

Source: Kelley, C.C. and P.N. Sprout. *Soil Survey of the Upper Kootenay and Elk River Valleys in the East Kootenay District of British Columbia.* Report No. 5 of the British Columbia Soil Survey. The B.C. Department of Agriculture in co-operation with the Experimental Farms Service, Canada Department of Agriculture, 1956.

Table 12—Average Financial Liabilities, According to Farm Type and Kind of Indebtedness, Rocky Mountain Trench, British Columbia, 1955

Kind of indebtedness	Beef	Dairy	Mixed livestock	Mixed crop and livestock	Other crop and livestock	Off-type	Part-time	All farms
				—dollars—				
Lands and Buildings								
Owing January 1, 1955	9	1,102	481	259	599	590	1,296	549
Borrowed—1955	28	346	105	350	450	398	—	195
Payments—principal	37	185	24	288	208	185	113	136
—interest	2	49	13	23	35	9	28	20
Owing December 31, 1955	—	1,263	562	321	842	803	1,186	608
Equipment								
Owing January 1, 1955	146	489	75	328	87	79	366	236
Borrowed—1955	180	618	111	121	33	298	209	220
Payments—principal	195	415	55	110	3	64	100	147
—interest	2	30	2	13	—	1	25	11
Owing December 31, 1955	131	692	131	339	117	312	474	309
Livestock								
Owing January 1, 1955	—	73	—	—	—	60	—	15
Borrowed—1955	49	234	—	25	—	—	—	45
Payments—principal	—	185	—	—	—	40	—	27
—interest	—	10	—	—	—	3	—	2
Owing December 31, 1955	49	121	—	25	—	20	—	33
Current Expenses								
Owing January 1, 1955	—	—	—	11	—	—	94	16
Borrowed—1955	260	—	74	156	883	154	6	166
Payments—principal	250	—	69	50	567	40	56	122
—interest	6	—	3	2	30	5	6	5
Owing December 31, 1955	10	—	5	117	317	114	44	61
Total Liabilities								
Owing January 1, 1955	155	1,663	556	598	686	729	1,758	817
Borrowed—1955	517	1,198	290	652	1,367	850	215	627
Payments—principal	482	785	147	448	778	329	270	432
—interest	10	90	18	39	66	18	59	38
Owing December 31, 1955	190	2,076	699	802	1,275	1,250	1,703	1,012

Operator's Labor Earnings.—The operator's labor earnings are derived by adding to the operator's labor income, the perquisites which include the value of the farm products consumed on the farm and the rental value of the farm house. Of the seven farm types three had negative operator's labor earnings ranging from $192 for the off-type farms to $1,062 for the part-time farms (Table 8). The other four types had positive returns: $4,440 for the "other crop and livestock" farms; $1,139 for the dairy farms; $300 for the mixed livestock farms; and $144 for the beef farms. The average operator's labor earnings, for all farms, amounted to $242 per farm.

Fifty-five farms had positive operator's labor earnings and these ranged from a low of $30 to a high of $10,247 per farm. The others had negative operator's labor earnings ranging from $52 to $3,863 per farm (Table 9).

Sixty-five farmers secured a total of $85,656 from off-farm income (Table 10). Sales of Christmas trees represented about 31 per cent of that income (Table 11). The Christmas tree industry is indeed an important source of income to many farmers in the area. They grow trees on their own farms and also on lands leased from the provincial Government.

The farmers, where possible, also attempt to supplement their income with employment in the mining, logging and lumbering industries. Guiding and trapping also provide some farmers with an additional, although small, source of income.

Table 13.—Average Changes in Indebtedness from January 1, to December 31, 1955 According to Farm Type, 105 Farms, Rocky Mountain Trench, British Columbia, 1955

Farm type	Owing January 1	Borrowed in 1955	Payments or principal	Increase in debt	Owing December 31
	—dollars—				
Beef	155	517	482	35	190
Dairy	1,663	1,198	785	413	2,076
Mixed livestock	556	290	147	143	699
Mixed crop and livestock	598	652	448	204	802
Other crops and livestock	686	1,367	778	589	1,275
Off-type	729	850	329	521	1,250
Part-time	1,758	215	270	—55	1,703
All farms	**817**	**432**	**432**	**195**	**1,012**

FARM LIABILITIES

On December 31, 1955, 45 of the 105 farms reported some indebtedness; the amount owed ranged from a high of $7,111 to a low of $43 per farm. Dairy farmers had the highest average debt, $2,076 per farm; and beef farmers the lowest, $190 per farm. The average, for all farms, was $1,012 (Table 12).

Money owing on land and buildings, the largest single item of indebtedness, averaged $608 per farm and represented 60 per cent of average total farm indebtedness. Money owing on equipment averaged $309 per farm and made up about 31 per cent of the total.

Liabilities, on the average, increased by about $195 per farm during the year 1955 (Table 13). Equipment accounted for $73 and land and buildings for $59.

FARM ORGANIZATION IN THE RED RIVER VALLEY, MANITOBA, 1957

T. O. RIECKEN

The Red River Valley of Manitoba is a grain growing area, where special crops are gaining in importance. The climate of the area is well suited to the production of the cereal crops commonly grown in the province and such special crops as sugar beets, and sunflowers which have been grown, with success, during the last 20 years. Because of its level topography the land is well suited for mechanized crop production. Most farms have livestock but their numbers are not very large except on farms supplying fluid milk to the Winnipeg market.

The Economics Division has collected data on farm organization, sources of income, and types of expenditures from a group of farms in the valley area south of Winnipeg, both east and west of the Red River. The farms studied were on fine-textured clay, the predominant type of soil in the area. These commercial farms were typical of the predominating sizes and types of farms, and of the prevailing methods of farm business organization and management. Part-time, retired or semi-retired farmers, and those who had been on their farms for less than three years were excluded, as well as fluid milk producers and others who had large specialized livestock business. The sample included 31 farms ranging from 234 to 401 acres and averaging 333 acres (about two-quarter sections) and 21 farms ranging from 465 to 561 acres and averaging 491 acres (about three-quarter sections) per farm. On the average, more than 95 per cent of the land was cultivated.

The Business Year 1956-57.—The period covered by the study was from "after harvest" 1956 to "after harvest" 1957. Receipts from grain and other crops were for the crop planted and harvested in 1957; livestock and other receipts were those received during the business year. For all the farms visited, summerfallow wheat averaged about 24 bushels per acre and wheat sown on stubble 12 bushels per acre. (The long-time average yield is about 18 bushels per acre.) Oats and barley averaged 29 and 13 bushels per acre, respectively. The growing season was normal but because of wet weather, the harvest season extended over a fairly long period. The most commonly reported wheat grade was No. 3 Northern.

Land Use.—On the half section farms wheat was the most common crop, followed by flax, oats, and barley (Table 1). Forage crops for hay, pasture, and seed occupied almost nine per cent of the cropland acreage. The summerfallow acreage was slightly lower than the 1956 provincial average of 24.7 per cent of the improved farm land. All farmers grew wheat; 59 per cent of it on summerfallow, six per cent on fallow after plowing down clover, and the remainder about evenly divided between first and second stubble crops. About 90 per cent of the half section farms reported oats of which nearly 94 per cent was first and second stubble crops. Seventy-seven per cent of the farms reported barley and most of it, 88 per cent, was grown on stubble. Nearly 80 per cent reported flax, only nine per cent on fallow and the remainder on stubble.

All the three-quarter section farms produced wheat, 50 per cent of it on summerfallow, 21 per cent as a first stubble crop, 25 per cent as the second stubble crop, and four per cent on fallow following the plowing down of a green manure crop. Fifty-seven per cent of the three quarter-section farms also grew some oats. Over one-half, 55 per cent, of the oats was seeded as a second stubble crop, and only seven per cent on fallow. Two-thirds of the farms grew barley; 52 per cent of it was seeded as a second stubble crop and 14 per cent on fallow. Ninety-five per cent reported flax; 75 per cent of it was grown as stubble crop. The 1957 flax acreage in the Valley area was nearly twice the average annual acreage for the past 12 years[1], and it is likely that more farmers than usual did grow flax in 1957.

Livestock.—Livestock operations were restricted by the general lack of adequate water supplies. However, of the 31 half section farms 18 had some cattle, 18 had some pigs, and 21 had chickens (Table 2). There were no sheep or turkeys and 19 had no horses. On 16 of the 31 farms there were one to four cows and only seven farms had herds of more than four cows. The chicken flocks were small family-size flocks, but 14 of the 22 farms with chickens reported more than 200 hens at the end of the year. There were nearly twice as many hens at the end as at the beginning of the year.

In general, there was less livestock on the three-quarter than on the half-section farms; less than one-half of the three-quarter section farms reported any cattle. Cattle enterprises were, on the average, only a little more than half the size of similar enterprises on the two-quarter section farms. Less than 60 per cent of all farms reported hogs or chickens.

Table 1.—Average Land Utilization, 31 Half and 21 Three-Quarter Section Farms, Red River Valley, Manitoba, 1957

Use	Half section farms		Three-quarter section farms	
	Acres per farm	Per cent of cropland	Acres per farm	Per cent of cropland
Wheat	80	25.0	134	29.0
Oats	46	14.4	39	8.4
Barley	34	10.6	55	11.9
Flax	48	15.0	95	20.5
Other crops[a]	11	3.4	21	4.5
Grass hay	12	3.8	4	.9
Legume hay	3	.9	6	1.3
Legume and grass seed	3	.9	7	1.5
Pasture	10	3.1	1	.2
Summerfallow	73	22.9	101	21.8
Total cropland	320	100.0	463	100.0
Farmstead and unimproved	13	....	28	....
Total farm area	**333**	....	**491**	....

[a] Includes sunflowers, soybeans, rape, peas, fodder corn.

Farm Labor.—The sample farms are typical family farms, the operator and his family supplying almost all of the labor. On the two-quarter section farms the operator supplied nearly 75 per cent and unpaid family labor 20 per cent of all labor (Table 3). The operator provided all the labor on four farms. Of the 14 farms hiring some labor, eight hired workers for less than one month and only three for more than three months. Nineteen farms, reported less than 15 months of labor.

The three-quarter section farms reported a smaller number of days of total labor, more hired labor, and slightly less family labor than the smaller farms. The operator was the only supplier of labor on eight farms. Ten farms

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[1] *Report on Crops, Livestock, Etc., Produced in Manitoba,* issued annually by the Department of Agriculture and Immigration, Winnipeg, Manitoba.

Table 2.—Average numbers of Livestock per Farm, 31 Half and 21 Three-Quarter Section Farms, Red River Valley, Manitoba, 1957

	Half section farms		Three-quarter section farms	
	Average number per farm	Per cent of farms reporting	Average number per farm	Per cent of farms reporting
Horses	0.6	39	0.4	24
Cows	3.4	77	1.6	48
All cattle	7.0	77	4.0	48
Sows	1.0	45	1.0	48
All hogs	10.2	58	7.0	57
Chickens	200	71	112	52
Turkeys	....	....	10	10

hired some labor; four of them for less than one month and two for more than two months.

Farm Capital.—The investment in real estate, machinery and equipment, and livestock on the half section farms averaged $74.73, $19.20 and $3.48 per acre, respectively, or a total of $97.41. The real estate investment included any real estate rented or leased; the non-owned portion of the real estate was about six per cent of the total real estate investment (Table 4). The machinery values are depreciated values. Livestock investment values, here, are conservative estimates of market values. The operators were asked to estimate the bare land value of their farms, that is, what the present buildings and improvements added to the value of their land. The average, for these bare land estimates, amounted to about $20,500 or 80 per cent of the total value of the real estate.

On the three-quarter section farms the investment in real estate, machinery and equipment, and livestock averaged $72.20, $16.83, and $1.60 per acre, respectively, or a total of $90.63 per acre. The operators valued the bare land at about $35,500 or nearly 90 per cent of the total value of the real estate.

For both size groups, there was a wide variation in capital values, the total investment ranging from a low of about $17,700 to a high of about $53,300 on half section farms, and from a low of about $29,800 to a high of about $65,400 on three-quarter section farms. Variations were as wide for each of the three main components of total investment.

Table 3.—Average amount of Labor per Farm, 31 Half and 21 Three-Quarter Section Farms, Red River Valley, Manitoba, 1957

Type of labor	Half section farms		Three-quarter section farms	
	Months for all farms	Per cent of farms reporting	Months for all farms	Per cent of farms reporting
Hired labor	0.9	45	1.4	48
Unpaid family	3.1	68	2.3	62
Operator	11.6	100	11.5	100
Total	**15.6**	....	**15.2**	....
Man equivalents	**1.3**	....	**1.3**	....

Table 4.—Average investment in Real Estate, Machinery and Equipment and Livestock, per Farm, 31 Half and 21 Three-Quarter Section Farms, Red River Valley, Manitoba, 1957

	Half section farms			Three-quarter section farms		
	Per farm	Range		Per farm	Range	
		Low	High		Low	High
			— dollars —			
Real estate	24,885	10,000	40,600	35,448	20,000	52,000
Machinery and equipment	6,392	2,175	13,605	8,263	3,602	12,775
Livestock (incl. horses)	1,159	100[a]	4,068	786	20[b]	3,208
Total	**32,436**	**17,677**	**53,318**	**44,497**	**29,777**	**65,399**
Estimate of real estate bareland value	20,530	....	....	31,710	....	....
Per cent of real estate owned by operator	94	....	....	96	....	....

[a] Four farms had no livestock.
[b] Six farms had no livestock.

Farm Receipts.—In computing the receipts from crop sales the value of the 1957 crop was calculated by estimating final prices for each kind of crop. The grades reported by the farmers were used in these calculations. From the value of the 1957 crop, a deduction was made for the value of seed and feed. It was assumed that all grain would be used for seed and feed sold. Data on livestock income were recorded from information on livestock receipts supplied by the farmers themselves. Changes in livestock inventories were considered as current receipts, or expense (Table 5).

On the half section farms income from crops accounted for 67 per cent

Table 5.—Average receipts per Farm 31 Half and 21 Three-Quarter Section Farms, Red River Valley, Manitoba, 1957

Source	Half section farms	Three-quarter section farms
	—dollars—	
CASH AND INVENTORY CHANGES		
Wheat	1,812	3,124
Oats	373	445
Barley	200	476
Flax	641	1,073
Other crops	271	579
Hay and forage seed	130	304
Cattle	256	309
Hogs	368	352
Poultry	96	113
Horses	4	5
Livestock inventory change	191	140
Milk, cream, butter	206	83
Eggs	448	200
Custom work, hail insurance, other	120	71
Total	**5,116**	**7,274**
Farm produce used in home	177	96
Rental value of farm home	370	393
Total farm receipts	**5,663**	**7,763**
Non-farm receipts	164	101

and wheat alone for 35 per cent of total cash receipts. Of the livestock enterprises, poultry and eggs contributed the most, nearly 11 per cent, and hogs and cattle a little less. Only two per cent of the income was derived from custom work and miscellaneous other sources. The value of the farm products used in the home, mostly livestock products was rather low.

Income from crops on the three-quarter section farms accounted for 82 per cent of the cash income, wheat accounting for 43 per cent and flax 15 per cent. The cattle, hog and poultry enterprises were about equally important. Custom work and miscellaneous other sources brought in only one per cent of the cash income. The value of the products consumed in the home was only a little more than half of the value of similar products consumed in the homes of half section farms. The value allowed for house rent was about the same for both groups of farms.

Farm Expenses.—Total cash and depreciation expenses averaged $11.76 per acre on half section farms and $10.49 on the three-quarter section farms. As much as 56 per cent of total costs were incurred for machinery and equipment—cash operating expenses and depreciation—on half section farms, and 55 per cent on three-quarter section farms. Real estate costs, including taxes, were the second largest cost item; taxes themselves represented as much as 85 per cent of real estate costs. Crop expenses, including purchases of seed, fertilizer and weed sprays; seed cleaning and treating; and hail insurance, made up 6.3 per cent of the costs on half section farms and 8.9 per cent on three-quarter section farms. Seed purchases made up over half of the outlay for crop expenses. Only about one in five farms spent any money on fertilizers. Livestock costs were low on both groups of farms; livestock purchases accounted for more than half of the livestock costs on both groups of farms. Purchases of feed made up most of the remainder of the livestock costs. Wages and board of paid labor were small items; the amount of hired labor was low and made up only about 20 per cent of the labor costs. The miscellaneous expenses include outlays for hydro, telephone, and hardware. Hydro and telephone outlays, for farm purposes averaged $52 and $15 respectively, per farm, on the half section farms and $66 and $24 respectively on the three-quarter section farms (Table 6).

Table 6.—Average farm expenses per Farm, 31 Half and 21 Three-Quarter Section Farms, Red River Valley, Manitoba, 1957

	Half section farms		Three-quarter section farms	
	Average per farm	Per cent of total	Average per farm	Per cent of total
CASH EXPENSES				
Real estate	536	13.7	747	14.5
Crop	246	6.3	460	8.9
Livestock	236	6.0	317	6.2
Machinery and equipment	956	24.4	1,309	25.4
Custom work	82	2.1	138	2.7
Wages paid and board	172	4.4	198	3.8
Miscellaneous	98	2.5	142	2.8
Total cash	**2,326**	**59.4**	**3,311**	**64.3**
DEPRECIATION				
Buildings	328	8.4	311	6.0
Machinery and equipment	1,262	32.2	1,529	29.7
All expenses	**3,916**	**100.0**	**5,151**	**100.0**

Depreciation charges were calculated on the basis of replacement costs for buildings and machinery. The depreciation for buildings included a charge for depreciation of the farm house and averaged $157 per farm on the half section and $144 on the three-quarter section farms. Machinery depreciation costs averaged $3.80 per acre on the half section and $3.11 per acre on the three-quarter section farms.

Purchases of machinery averaged $881 per farm on half section farms and $1,028 per farm on three-quarter section farms.

Financial Summary.—The financial summary, for the two groups of farms, is presented in Table 7. The livestock products and meat consumed in the home and the rental value allowed for the use of the house were included as receipts. The expense figures include cash expenses and depreciation charges but do not include current capital outlays for machinery, equipment and buildings nor do they include any allowance for wages and board of family labor. The measure of net return is the "Return to operator and family for labor, management and capital". On the two half section farms this net return ranged from a low of minus $1,043 to a high of $5,448. One-third of the half section farms had net returns amounting to $947 or less and averaging minus $23; the top one-third of the farms had returns of $2,775 or more and averaging $3,661 for the group.

On three-quarter section farms, the returns ranged from minus $1,648 to a high of $6,467. The lowest one-third of the farms had net returns below $1,533 and averaging minus $111. On the other end of the scale the top one-third of this group had incomes of $4,947 or more and averaging $4,921 per farm.

RESEARCH IN CONSUMPTION ECONOMICS 1953-1958

L. E. Drayton

In 1953 a review was prepared of research in the field of Consumption Economics undertaken by the Economics Division up to that time.[1] Most of the studies referred to in this review were consumer preference and dietary studies conducted by the technique of interviewing consumers at their homes. Some studies which had used other methods, particularly market area studies, were not mentioned.

The purpose of the present article is to describe the development of research in consumption economics in the Department of Agriculture since 1953. Earlier work not mentioned in the previous article is also reviewed.

Potatoes.—A controlled experiment on the sale of potatoes graded for specific gravity was conducted in 1953. This study had been undertaken by the Horticultural Division of the Experimental Farm Service. The Economics Division played only a minor role.

The 1953 experiment on the sale of potatoes graded for size and specific gravity proved somewhat inconclusive. Accordingly, a second simplified experiment was undertaken in 1954. Potatoes of above average specific gravity labelled Red Line and of lower specific gravity labelled Blue Line were distributed through 10 supermarkets in Toronto for a sales test. During the sales test 1000 housewives were given potatoes to determine the ability of the average housewife to recognize the difference between the two classes of potatoes. This distribution to housewives revealed that this difference was hard to recognize. Then higher specific gravity of the Red Line potatoes was expected to render them the more mealy of the two classes and probably did. However, a large percentage of the Red Line potatoes was quite close to the minimum specific gravity for their grade; and a large percentage of the Blue Line potatoes was close to the maximum specific gravity for their grade. Consequently, the difference between Red Line and Blue Line was very small. Moreover, neither appeared to be generally preferred to the average potato on the market.

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[1] Drayton, L. E., *Development of Research on Food Consumption by the Economics Division; The Economic Annalist*, April 1953; pp. 40-43.

The sales test did reveal that there was a small section of the public who sufficiently preferred the Red Line potatoes, which were advertised as mealy, over either Blue Line or most other brands of potatoes on the market to pay a substantial premium for them. Nevertheless, there was one brand offered in the stores of the test which consistently outsold Red Line potatoes even though its price was higher. Moreover, as the sales test progressed both Red Line and Blue Line potatoes steadily lost ground relative to competing brands.

The report of this study was not published, but a useful purpose was served. It was quite clearly established that grading potatoes on the basis of specific gravity would not, under the circumstances prevailing at the time, lead to any increase in the returns which growers might realize from potatoes sold on the Toronto market. Consequently, it was decided that potato grades based on specific gravity should not be instituted at an early date. The establishment of such grades was under consideration at the time, since research undertaken at Cornell University had established a possibility of benefits to potato growers from grading potatoes on the basis of specific gravity.

Cheese.—In 1950 cheese had been offered at a booth at the Royal Winter Fair in Toronto to be sampled by all interested visitors.[1] A wholesale audit had been used in a study of cheese consumption in conjunction with consumer interviews in a study of cheese consumption.[2] In 1954 a retail audit was used to measure per capita consumption of cheese in four rural areas.[3] For this study the limits of the area served by retailers of food in the selected rural areas were carefully defined. Data on sales of cheese for one year were obtained from retailers in these areas. For the first six to nine months of the year these data were obtained by interview and checking of purchase invoices. For the balance of the year the retailers concerned furnished reports on their cheese purchases. As full co-operation was secured from a very large proportion of the retailers involved it is believed that the estimates made of cheese consumption were quite accurate.

Bacon.—At the Royal Winter Fair in Toronto in 1953 and Le Salon National de l'Agriculture in Montreal in 1954 the Department of Agriculture operated special booths for the display of bacon. The attendants at these booths asked each passerby to rate each of six slices of uncooked bacon as good, fair and poor and as acceptable and unacceptable on the basis of its appearance.[4] This study indicated a strong preference for lean bacon.

This work was followed up from 1955 to 1957 by a series of sales tests on Grade A Lean bacon in Montreal, Edmonton and Toronto. The standard determined for Grade A Lean bacon was based on the findings of the 1953 study. The sales tests did not have all the controls of a scientific experiment but were designed to measure the acceptance of Grade A Lean bacon under normal marketing conditions. They were supplemented by numerous interviews of buyers of the Grade A Lean bacon. On the whole, findings indicated that a substantial number of consumers are willing to pay a premium for side bacon selected on the basis of leanness.[1] Unfortunately, the proportion of side bacon produced which attains the Garde A Lean standard is small. Consequently, there is some uncertainty as to the effect that the adoption of the suggested grade standard would have on the return to hog producers. If it resulted in a weakening of the price of bacon below the Grade A Lean standard it might easily reduce returns, unless bacon production practices were adjusted to increase the relative yield of lean side bacon.

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[1] See Way, W.C., *Consumer Taste Preferences at the Royal Winter Fair, The Economic Annalist*, June 1951, pp. 67-70.

[2] Drayton, L. E., *Sales of cheese in Selected Canadian Cities*, Economics Division, Canada Department of Agriculture, 1953.

[3] Johnston, Charlotte I., *Consumption of Cheese in Certain Rural Areas of Quebec and Ontario*, 1954, *The Economic Annalist*, February 1956; pp 11-18.

[4] *Breakfast Bacon. Consumer Preferences in relation to Fat-Lean Distribution.* Livestock and Livestock Products Division, Economics Division and the Consumer Section, Marketing Service, June 1954, 19 pp.

Beef.—Starting in 1956 a series of studies were undertaken on consumer reaction to the appearance of beef of various grades. For these studies beef of four grades was displayed in stores in Vancouver and Ottawa and at the Royal Winter Fair in Toronto. The cuts were identified by numbers only and passers-by were asked by an attendant to state which were the best and which were the poorest. It was clearly established that many consumers object to large quantities of fat in beef cuts.[2]

In evaluating the data of these studies it was fully recognized that preferences based on the appearance of beef do not necessarily correspond to the choices that would be made with a full knowledge of the flavor, tenderness and other characteristics of the cuts concerned. Nevertheless, it is clearly evident that there would be a strong demand for lean beef from young animals if selected on a basis which made it satisfactory to most consumers on these other scores. Accordingly, a new grade for beef, Standard, has been set up.

Eggs.—In 1956 the Poultry Division started a series of studies on new methods of storing eggs. Eggs stored under various treatments were submitted to a taste panel conducted by the Consumer Section of the Department. The Economics Division collaborated in the second study of this series in 1957. This time the most promising of the treatments tested in the previous year, storage of eggs packed in the regular Keyes trays with half-case lots sealed in a plastic bag, either polyethelene or cry-o-vac, was tested again and compared with oil storage. The results of two separate taste panels indicated that the eggs stored in plastic bags retained their quality at least as well, if not better than, the oiled eggs for up to five months of storage.

In 1958, a sales test was set up in Toronto to evaluate the relative saleability of oiled eggs and eggs stored in plastic bags. Early in the test it was established that the quality of the eggs stored in plastic bags was not holding up satisfactorily. Some modification of the technique used appears necessary. Further research on the physical and biological problems involved is required to determine the requirements of satisfactory techniques.

Apples.—In 1957 the Quebec Marketing Board requested a study of consumer preferences for apples in Greater Montreal. For this particular problem the technique of house-to-house interviewing of consumers appeared most practicable and was used. The preparation of the report is under way.

Aggregate Food Consumption.—The studies discussed thus far all relate to consumption of and preferences for specific food products. However, analysis of trends in food consumption and patterns of food consumption as related to region and various family characteristics is also a very important aspect of consumption economics.

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[1] *Breakfast Bacon, Consumer Acceptance of Grade A Lean Bacon,* Livestock and Livestock Products and Economics Division, Marketing Service, Canada Department of Agriculture July 1957.

[2] Drayton, L.E., *Consumer Choices among Beef Roasts and Steaks Based on Visual Inspection, The Economic Annalist,* August 1958, pp. 78-85.

Statistics on food consumption in Canada are compiled by the Agriculture Division of the Dominion Bureau of Statistics. The Economics Division has collaborated with the D.B.S. in a consolidation and revision of these statistics.[1]

Market Area Studies.—Market area studies cast considerable light on food consumption patterns within the area studied. The prime purpose of such studies is to measure the quantities of agricultural products moving in and out of a specific area in order to measure the capacity of its market. Usually data are obtained for a period of at least one year. Such data alone do not reflect consumption. To convert these data to estimates of consumption per person it is necessary to add production to the net imports of the area (shipments in less shipments out) adjust for stock changes and divide by population. If the area consists of one or more province production data are usually readily available. Indeed such data can often be obtained for smaller areas such as counties. The same applies with respect to population. Data on stocks may provide more difficulty. However, the location of commercial storage warehouses is known and most of these report their stocks by commodity to the Dominion Bureau of Statistics.

Since 1941 the Economics Division has made several market area studies. [2] This type of work was temporarily discontinued about 1953. However, in 1957 a new study of this type, *Net Movement of Agricultural Products into and out of the Maritime Provinces,* was undertaken at the request of the Atlantic Provinces Economic Council. Because of the considerable movement of food products in mixed carloads, trucks and small consignments market area studies involve the gathering and analysis of much detailed data.

Analysis of Data gathered for other Purposes.—Another approach to the study of regional variation in food consumption patterns is the analysis of available data collected for other purposes by the Dominion Bureau of Statistics. Food production and stocks data can be obtained on a provincial basis. However, statistics on interprovincial movements of food products are not too satisfactory, at least for some foods. Plans have been made to examine the possibility of obtaining at least rough approximations of regional variations in the food consumption pattern from these data. It is expected that the experience of the current market area study in the Maritime Provinces will indicate whether or not such approximations are likely to be sufficiently close to the actual pattern to be useful.

The Labour and Prices Division of the Dominion Bureau of Statistics have conducted three surveys of food expenditure in five large Canadian cities. These surveys contain much on quantities of food consumed which information has not been fully analyzed. Arrangements have been made for fuller analysis of this material to determine the light which it may cast on both variations in food consumption patterns related to cities and the income elasticity of demand for various foods.

---

[1] *Handbook of Agricultural Statistics Part IV*. Food Consumption in Canada 1926-55, Reference Paper No. 25, Dominion Bureau of Statistics.

[2] Following are titles of these studies: Reid E. P. and W. C. Hopper, *The Market for Farm Products in the Sydney Area of Nova Scotia*, 1941. Peters, W. R. and E. P. Reid, *The Market for Farm Products in Urban Centers in Northern Ontario*, 1945. Thair, P. J., *The Market for Farm Products in the Town of Smiths Falls*, 1946. Reid, E. P. and H. Dubord, *The Market for Farm Products in Northwestern Quebec*, 1947. Maxwell, J. C. and E. P. Reid, *The Market for Farm Products in North Central British Columbia*, 1950. Maxwell, J. C., *The Market for Farm Products in the Creston Valley of British Columbia*, 1951. Shipley, W. C. and I. F. Furniss, *The Market for Farm Products in the West Kootenay Area of British Columbia*, 1953. Shipley, W. C. and J. Nairn, *The Market for Farm Products in the East Kootenay Area of British Columbia*, 1953. Shipley, W. C., *The Market for Farm Products in Newfoundland*, 1954.

Work with other agencies.—It should be noted that most of the studies cited in the foregoing outline were joint undertakings of the Economics Division with other agencies. The Horticulture Division, The Fruit and Vegetable Division, and The Consumer Section of the Canada Department of Agriculture as well as a potato marketing co-operative, a chain store firm and the Canadian Association of Consumers, collaborated in the potato studies. Those participating in the bacon studies included the Livestock and Livestock Products Division and the Consumer Section of the Canada Department of Agriculture, three different chain store firms and two meat packing companies. The Livestock and Livestock Products Division also collaborated in the beef studies along with three large scale retailers of meat. Those participating in the conduct of the egg studies included the Poultry Division and Consumer Section of the Canada Department of Agriculture, the Ontario Agricultural College, the National Research Council, two egg grading and storage firms and a food chain store organization. The Department of Agricultural Economics, Macdonald College is collaborating in the Quebec apple study. The study of *Net Movement of Agricultural Products in the Maritime Provinces* is being carried out in conjunction with the Departments of Agriculture in the three provinces concerned.

This extensive collaboration with other agencies has resulted largely from the purpose of research being conducted. The studies of potatoes, bacon and beef were all related to changes in grading policies under consideration in the various commodity divisions. The egg studies likewise relate to policies of the Poultry Division. Consequently, an effective job has required close collaboration between the researchers and those most familiar with the problem and various suggestions advanced for meeting it. This collaboration has been effected by joint planning in the initial stage, followed by contributions in the actual conduct of the study by each of those agencies most concerned. Public agencies and organizations outside the Canada Department of Agriculture have participated in both the planning and conduct of studies as interested parties.

Where studies have involved considerable cost to business firms there have been arrangements to safeguard them from losses arising out of their participation. The business firms approached have generally been co-operative in their attitude and reasonable in their requirements for participation.

PUBLICATION OF THE ECONOMICS DIVISION

Co-operation in Canada, 1957. Kristjanson, B. H. Ottawa, September 1958. pp. 17.

The 26th annual statistical summary of co-operative activities in Canada.

OTHER PUBLICATIONS

Planning the Effect of Community Pasture on Cumberland County Livestock Farms. Grant, Walter V. Farm Management Division, Extension Service Branch, Department of Agriculture and Marketing, Halifax, Nova Scotia. May 1958. pp. 29.

An analysis of alternative farm plans that might be followed on the livestock farms of Cumberland County.

Principaux Facteurs de Succès sur la Ferme—"Méthodes d'analyse et applications pratiques". Lavigne, Benoit. Rural Economics Service, Quebec Department of Agriculture, Quebec City. April 1957. pp. 61.

The author uses farm accounts to illustrate various methods of measuring success on the farm. His report includes sections on: *size of business; crops; livestock; feeding efficiency; income variations; labor efficiency;* and *economic problems in farm operations.*

Farm Management and Accounting Report 1956.
Circular 315—Cash Crop Farms. pp. 23.
Circular 316—Dairy General Farms. pp. 22.
Circular 317—Dairy Specialty Farms. pp. 23.
Circular 318—Beef-Hog Farms. pp. 25.
Circular 319—Poultry General Farms. pp. 20.
Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario. October 1957.

Reports on a farm management and accounting project "prepared especially for . . . co-operating farmers . . . and many other farm operators and agriculturalists . . . interested in what is happening to farm businesses". The analysis relates financial results to: size of business; rates of production of crops and livestock; use of labor and machinery; use of capital; and choice and combination of enterprises.

The analyses and the preparation of reports for the 1956 farm business were under the direction of J. H. Clark, Farm Economics Branch, Ontario Department of Agriculture and H. W. Caldwell, Department of Agricultural Economics, Ontario Agricultural College.

Some Economics of Fertilizing Canning Tomatoes. MacGregor, M. A. and K. R. Ellinger. Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario. pp. 9.

A report on a study designed to determine, under three different fertilization practices: (a) the yields of canning tomatoes grown under three different fertilization practices; (b) the additional farm costs and returns of growing canning tomatoes; and (c) the differences in quality, if any, resulting from different fertilization practices.

The Response of Ontario Dairy Farmers to Bulk Milk Handling, 1953 to 1956. Marshall, R. G. and M. A. MacGregor. Department of Agricultural Economics, Ontario, Agricultural College, Guelph, Ontario. pp. 18.

The first section of this report deals with *Changes Made by Producers Converting to Bulk Cooling* under the following headings: *Change in Size of Herd; Changes in Land and Labour Use; Change in Other Livestock Enterprises;* and *Opinions Expressed by Producers who Converted.* The second section is concerned with *Changes Made by Farmers not Converting to Bulk Milk Cooling* or, more specifically, with *Size of Dairy Enterprise Prior to Conversion; Milk Production per Cow Prior to Conversion; Size of Farm; Labour Requirements; Age of Operator;* and *Other Livestock Enterprises.*

Country Elevators in South-Western Ontario Handling Corn, Soybeans, Wheat and White Beans, 1955-56. Campbell, D. R. Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario. pp. 23.

A preliminary report on a study of elevators in southwestern Ontario. This study is one phase of a larger study of marketing cash grains in that part of Ontario. The report discusses matters relating to: *Production and Marketing; Volume and Value of Grains Handled; Payments, Grading and Moisture Testing;* and *Ownership of Elevators.*

Proceedings of Winter Short Course in Co-operation and Marketing. Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario. December 31, 1957 to January 3, 1958. pp. 94.

The Proceedings contain papers on: *Contract Feeding; Contract Farming—Some Implication; Can More Credit Improve Farm Incomes?; The Effect of Production Efficiency on Farm Income; The Conflict in Interest Between the Individual and the Group; Is Marketing the Answer to Low Farm Incomes?; Is Agriculture Doomed to Chronic Depression?; Farmers' Conceptions of Processors, Retailers and Consumers; The Processor's Role in Marketing Farm Products; The Retailers' Place; The Consumers' Place; The Role of Educational Organizations in the Farm Economy;* and *Marketing Board Legislation.*

Community Auction Sales Barns in Ontario. Rodd, R. S. Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario. February 1958. pp. 46.

A descriptive study of "sales barns" in Ontario, dealing specifically with their history and organization, facilities, financial operations, sales at livestock auctions, commission charges, selling practices, and buyers.

A Brief Description of Community Sales Barns in Ontario. Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario. January 1958. pp. 8.

An abbreviated version of the 46-page bulletin on *Community Auction Sales Barns in Ontario.*

Research Project in Farm Management with Carman District Farm Business Association. Hudson, J. P. Report No. 5, Department of Agricultural Economics and Farm Management, Faculty of Agriculture and Home Economics, University of Manitoba. June 1958. pp. i + 16.

A report covering the summary of the farm business in 1957.

Grassland in England and Wales. Benyon, V. H. Department of Economics (Agricultural Economics), University of Bristol, Devon, England. April 1958. pp. 59. Price 5/0.

A report showing the importance of grass in different parts of England and Wales, describing some of the methods used to calculate production from grassland as well as existing levels of performance, and analyzing the factors which influence the level of output.

An Economic Study of Pig Production in South West England, 1953-57. Report No. 105. Burnside, Estelle and R. C. Rickard. Department of Economics (Agricultural Economics), University of Bristol, Devon, England. April 1958. pp. 52. Price: 5s.

"The principal aim" of this study was "to provide a record of changes in the conditions affecting pig producers and to outline some of the ways in which farmers can attain a greater degree of efficiency, which may be of some use in meeting future problems."

The Farms of Dorset—An Economic Classification of the 5,265 Agricultural Holdings in the County. Report No. 104. Langley, J. A. and H. W. B. Luxton. Department of Economics (Agricultural Economics) University of Bristol, Devon, England. April 1958. pp. 51. Price: 5s.

This study was designed to determine the number of full-time farms in Dorset and to classify these farms into broad farming types; to study their location and relative importance when grouped by size and type; to show the basic organization of the various types of farms; and to supply statistical data relating to the farms of Dorset.

B

THE ECONOMIC ANNALIST

FEBRUARY 1959

Vol. XXIX, No. 1

DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS
MARKETING SERVICE, ECONOMICS DIVISION,
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Hon. Douglas S. Harkness, Minister of Agriculture

INDEX, VOLUME XXIX, 1959

PAGE

Agriculture and the Common Market ... 12

Capital Investment on Grain and Livestock Farms in Manitoba, 1957 ... *C. Varkaris* 38

Changes in Agricultural Production in the Maritime and Central Regions of Canada, 1941-1956 ... *C. Varkaris* 108

Changes in Agricultural Production in the Prairie and British Columbia Regions of Canada, 1941-1956 ... *C. Varkaris* 134

Credit Unions in Canada ... *V. A. Heighton* 29

Economic Situation—February ... 3
—April ... 27
—June ... 51
—August ... 75
—October ... 99
—December ... 123

Evaluation of Rotations in the Park Area of Saskatchewan ... *J. K. Wiens* 127

Factors Contributing to the Success of Farm Operations on the Grey Wooded Soils of Alberta ... *R. J. Mcfarlane* 137

FAO and International Commodity Problems ... 31

Farm Business in Central British Columbia, 1953-55 ... *J. W. Couston* 5

Farm Family in Canada ... *Helen C. Abell* 53

Farm Organization, Sifton-Fork River Area of Manitoba, 1949 and 1958 ... *L. M. Johnson* 59

Farm Practices in Beef Production in Five Selected Counties of Ontario, 1956 ... *H. W. Trevor* 83

Features of the Cattle Enterprise in the Lundar-Eriksdale Area of Manitoba ... *J. G. Mackenzie* 41

Food Purchases, St. John's, Newfoundland, 1955 ... *Charlotte I. Johnson and L. E. Drayton* 90

Land Values in Manitoba, 1958 ... *L. E. Sparling* 112

New International Wheat Agreement ... 65

Pasture Costs in Five Counties of South-western Ontario, 1958 ... *H. W. Trevor* 70

Quantities of Food Purchased in Urban Areas, 1955 ... *Charlotte I. Johnson* 77

Red Meat Consumption in Canada ... *L. E. Drayton* 101

World Agriculture: A Review, 1957-58 ... 24

The Queen's Printer and Controller of Stationery, Ottawa, 1960

69844-9

THE ECONOMIC ANNALIST

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J. F. BOOTH, Chief

FEBRUARY 1959 Vol. XXIX No. 1

CONTENTS

Page

The Economic Situation 3

The Farm Business in Central British Columbia, 1953–55
J. W. Couston 5

Agriculture and the Common Market 12

World Agriculture: A Review 1957–58 24

EDITORIAL COMMITTEE:

G. P. Boucher, L. E. Drayton and Frank Shefrin

Published by Authority of the Honourable Douglas S. Harkness
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
		1935-39=100						1949=100		1935-39=100
1913	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	85.6
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	94.6
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	108.0
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	102.0
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	109.7
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	131.4
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	164.8
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	195.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	208.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	212.4
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	187.2
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	171.9
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	187.8
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	196.3
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	199.6
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	211.5
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	226.5
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	233.0
1953	220.7	221.6	179.4	263.8	250.4	234.8	207.4	115.5	112.6	248.4
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	244.6
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	265.8
1956	225.6	214.2	181.6	246.9	234.5	247.6	208.8	118.1	113.4	284.4
1957	227.4	210.8	163.6	258.0	231.0	255.8	211.3	121.9	118.6	284.0
1958	....	....	....	....	....	....	....	....	....	....
1958										
April	227.9	222.7	165.5	279.9	240.6	262·7	213.1	125.2	123.4	278.5
May	228.1	223.1	157.8	288.3	244.7	....	....	125.1	122.7	279.0
June	227.4	221.1	155.9	286.4	242.7	....	....	125.1	122.7	279.9
July	227.0	219.4	159.4	279.3	241.6	....	....	124.7	121.4	279.3
August	226.8	215.9	156.5	275.2	238.5	262.9	213.7	125.2	122.6	275.8
Sept	227.1	211.1	155.2	266.9	236.1	....	....	125.6	122.9	276.5
Oct	226.9	211.8	154.4	269.3	236.4	....	....	126.0	123.4	277.2
Nov	228.5	212.1	155.2	269.1	236.5	....	....	126.3	123.2	280.7
Dec	229.1	217.6	156.5	278.7	239.3	....	....	126.2	122.2	....
1959										
Jan	229.7	....	....	....	....	....	....	126.1	122.3	....
Feb	....	....	....	....	....	....	....	....	....	....
Mar	....	....	....	....	....	....	....	....	....	....

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1956—July 1957 include final barley and wheat payments announced June 11, 1958.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION[1]

International.—An important feature of the world economic situation in 1958 was the renewed economic activity in the United States after a short recession during the last half of 1957 and early 1958. The earlier depressing influence of inventory liquidation on industrial activity has been reversed and declines in business investment appear to have been checked. With increased spending by governments and individuals on housing and consumer goods and services, over-all activity has been increasing. The United States recovery now appears to be firmly established though it may be some time before all of the underutilization in the labor market and in plant capacity is taken up.

In western Europe a mild check to the vigorous rate of growth in the postwar years has developed in certain countries. High levels of exports to North America have continued and a significant and widespread increase in exchange reserves has developed since late in 1957.

The recovery in the United States domestic economy, supported by special measures designed to alleviate balance of payments difficulties in the underdeveloped countries, provided greater underlying strength to world trade at the end of 1958 than in the opening months of that year.

Canada.—In Canada, the decline in economic activity that developed during 1957 was checked in 1958. As in the United States, some underutilization of both manpower and physical facilities is still present and the easing in demand forces has resulted in a level of unemployment appreciably higher than in the immediate postwar period. In late 1957 and early 1958 liquidation of business inventories was an important moderator of inflationary pressures and demand for factors of production. Since mid-year, however, the rate of liquidation has been restrained. An expansion in the demand for industrial materials in the United States should provide firm commercial support for Canadian primary exports.

In Canada the decline in business investment and the offsetting increase in government spending are likely to continue in 1959. Aside from its effects on labor, the impact of the recent decline in physical activity was felt most severely by business in the form of lower corporate profits and by the Federal government in the form of falling revenues.

Expenditures of the Canadian Government have increased sharply, particularly transfer payments. Consequently, personal incomes in the aggregate were well maintained during the decline of 1957 and continued to increase during 1958. Real income per industrial worker was about 30 per cent higher in 1958 than in 1951. These high levels of personal income have provided an important element of support to the domestic economy. Larger personal incomes, high rates of saving and large holdings of liquid assets have laid the basis for further expansion in consumer expenditure. These developments should ensure continued strength in the domestic market for agricultural products.

International Action Affecting World Trade.—International trade in agricultural products will be affected by some important events which occurred in 1958. Among these are the Commonwealth Trade and Economic Conference held in Montreal in September, the further development of the European Common Market, international action relating to agricultural protectionism taken under the General Agreement on Tariffs and Trade and by other agencies, various actions taken by the United States affecting agricultural trade, and the continued relaxation of dollar import restrictions particularly by Commonwealth countries.

The Commonwealth Trade and Economic Conference provided an opportunity for a careful review of intra-Commonwealth trading relations and the commercial relations of Commonwealth countries with the outside world.

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[1] Based on material prepared for the Situation and Outlook Issue of *The Current Review of Agricultural Conditions in Canada,* January 1959.

The Commonwealth will continue to seek the establishment of a multilateral trade and payments system over the largest possible area and the removal of restrictions on the free flow of international trade. The Conference recognized the problems created for many countries by agricultural protectionism and agreed to seek international action to mitigate the adverse effects of such protectionism. An expansion of the programs of assistance to under-developed countries was discussed, and Canada announced increased contributions to Colombo Plan countries and the West Indies.

Since last year, the European Economic Community has set about establishing its institutions and formulating its policies. In the agricultural field the Common Market Treaty envisages a co-ordinated managed market for agricultural products quite different from that of the industrial sector and provides a framework for the establishment of minimum prices, preferential long-term commodity arrangements and discriminatory quotas. It is not as yet clear what final arrangement will apply to major Canadian exports of agricultural products to the six member countries.

Important developments affecting international trade in agricultural products occurred in the United States in 1958. The Congress extended the Trade Agreements program for four more years, authorizing the administration to reduce tariffs by a maximum of 20 per cent. A round of tariff negotiations is proposed for 1960 to take advantage of this new authorization. The United States surplus disposal program has been continued and certain sectors, such as the barter arrangements, have been expanded.

The liberalization of dollar import policies in Commonwealth countries during 1958 have affected trade in agricultural products. In the United Kingdom there have been additional relaxations of restrictions on agricultural products. Fresh, canned and dried fruits are now being admitted under quotas covering the whole dollar area. A northern hemisphere allocation for fresh apples has replaced specific dollar allocations and enabled Canada to compete for a larger share of the United Kingdom market. At the Commonwealth Trade and Economic Conference the United Kingdom expressed its intention of making a start in 1959 on freeing dollars for the remaining food stuffs and consumer goods and stated that it was inviting the colonies to ease their dollar restrictions. As a result of the various measures which have been taken, Canada's export trade with Sterling countries now faces fewer restrictions than at any time during recent years but will still have to face strong competition.

The extension of convertibility in Western Europe is another important measure affecting world trade. The Governments of Belgium, Denmark, France, Germany, Italy, Luxembourg, Netherlands, Norway, Sweden, and the United Kingdom informed the International Monetary Fund on December 27, 1958 that they had taken measures to establish nonresident convertibility for their currencies. A similar communication was received from Austria on December 31. In general terms, this means that the currencies of these countries will, with some minor exceptions, be convertible by nonresidents, not only as hitherto into each other's currencies, but also into United States dollars. The achievement of nonresident convertibility reflects the great improvement in the European economic situation, including the strengthening of monetary reserves. This development has been made possible not only by the general increase in production during the postwar period and certain other favorable circumstances, but more particularly by the pursuit of effective fiscal and credit policies. The measures now taken, which are the expression of a remarkable co-operative effort, represent a consolidation of the progress achieved since the war and should provide the basis for further progress not only in Europe but also in relation to other areas.

THE FARM BUSINESS IN CENTRAL BRITISH COLUMBIA, 1953-55 [1]

J. W. COUSTON

Central British Columbia is an area of buoyant industrial activity. The large Kitimat development project of the Aluminum Company of Canada is especially well known. Kitimat was a community of about 9,000 people late in 1955 and has since grown to about 12,500. A further considerable increase in population is expected to take place during the next five years, a period which is likely to see the completion of two-thirds of the Kitimat project.

This surge in population and industrial activity stresses the need for an evaluation of the area as a potential source of agricultural products. As a basis for this evaluation, the Economics Division has made a study of the farm business in the general area from Terrace, at the western end, to McBride in the east. Detailed information was obtained from 176 farms, 61 survey records being completed for the 1953-54 crop year and 115 for the 1954-55 crop year.

Farm Type.—The 176 farms were classified according to type, on the basis of their main sources of income. The farms which secured 65 per cent or more of their income from a major enterprise such as livestock, crops, poultry, or fluid milk were classified as livestock, crop, poultry or dairy farms. Those which obtained less than 65 but more than 50 per cent of their returns from livestock and crops, were designated as livestock-crop or crop-livestock depending on which enterprise contributed the more to the income returns. Farms which secured less than 50 per cent of their returns from the farm business were considered as part-time farms and those which used in the home, farm products estimated at 50 per cent or more of all farm returns, were considered as subsistence farms. All other farms were designated as off-type farms; they secured the major portion of their returns from forest products. On this basis there were 42 livestock farms, 32 livestock-crop, 29 part-time, 18 dairy, 17 crop-livestock, ten subsistence, ten crops, nine poultry, and nine off-type farms.

Land Use.—The total area covered by the survey included 60,972 acres; 17,453 acres (28.6 per cent) were improved and 43,519 (71.4 per cent) were unimproved.

The livestock-crop and the dairy farms had the largest improved acreage, on the average, and the crop, poultry and subsistence farms the smallest. (Table 1). About 45 per cent of the unimproved acreage, or nearly one-third of the total acreage, was in unimproved pasture. There was some variation in the share of the cultivated land allotted to a particular crop but in most cases the largest share went to forage crops and the second largest to grain crops.

The general distribution of the cultivated land, according to use and by type farm, is described in Table 2. A little over 50 per cent of all cultivated land was in forage crops: On the average, this proportion ranged from 32.4 per cent on crop-livestock farms to 68.4 per cent on off-type farms.

All farm districts, except Terrace, had most of their cultivated land in forage and grain crops. Terrace followed a different pattern; it had nearly two-thirds of its culivated acreage, on the average, in vegetables and small fruits compared with less than two per cent in the other districts. The Vanderhoof, Prince George, and McBride districts had about two-thirds of their cultivated acreage in grain crops, a larger proportion than in the other districts (Table 3).

The yields per acre of various crops varied rather sharply by district during the period for which data were obtained (Table 4). The Terrace and McBride district had relatively high yields for almost all the crops for which data were obtained.

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[1] The first in a series of articles on the farm business in Central British Columbia.

Table 1.—Average Total, Improved and Unimproved Acres by Farm Type, Central British Columbia, 1953-55.

Farm Type	Number of farms	Acreage per farm		
		Average total	Average improved	Average unimproved
Livestock-crop	32	463	128	335
Off-type	9	391	108	283
Dairy	18	389	128	261
Livestock	42	375	106	269
Crop-livestock	17	305	113	192
Part-time	29	271	67	203
Poultry	9	259	54	205
Subsistence	10	245	74	171
Crop	10	204	52	152
All farms	**176**	**346**	**99**	**247**

Table 2.—Proportionate Use of Cultivated Land by Farm Type, Central British Columbia, 1953-55.

Farm Type	Per Cent of Cultivated (Farm Type) Acreage						Cultivated acreage as a per cent of total acreage
	Forage crops	Grain crops	Improved pasture	Summer fallow	Forage seed	Other[a]	
	—per cent—						
Crop-livestock	32.4	40.7	8.2	13.4	4.3	1.0	35.5
Dairy	59.2	20.8	16.1	3.0	—	0.9	32.1
Livestock	56.1	28.7	5.1	3.2	6.4	0.5	27.3
Livestock-crop	47.4	24.9	12.4	2.6	11.4	1.4	27.0
Off-type	68.4	12.0	19.3	—	—	0.3	26.8
Subsistence	48.5	18.7	14.2	11.0	7.0	0.6	26.1
Crop	37.2	25.2	11.2	8.3	7.6	10.5	24.7
Part-time	50.0	30.7	6.9	6.5	4.8	1.1	23.5
Poultry	37.4	41.8	3.3	6.5	8.5	2.5	19.8
All farms	**50.5**	**27.2**	**10.1**	**4.9**	**6.1**	**1.2**	**27.5**

[a] Includes vegetables and small fruits.

Table 3.—Proportionate Use of Cultivated Land by District, Central British Columbia, 1953-55.

District	Per Cent of Cultivated (District) Acreage						Cultivated acreage as a per cent of total (district) acreage
	Forage crops	Grain crops	Improved pasture	Summer fallow	Forage seed	Other	
	—per cent—						
Terrace	32.5	4.8	30.9	—	—	31.8	18.4
Hazelton	77.5	16.9	4.0	—	—	1.6	21.9
Smithers	51.2	23.5	10.1	2.3	11.1	1.8	26.8
Burns Lake	66.3	14.6	14.7	0.1	4.1	0.2	30.2
Vanderhoof	38.7	35.9	9.0	16.0	0.4	—	33.7
Prince George	49.2	33.9	8.8	1.3	5.4	1.4	24.4
McBride	43.1	33.5	9.0	5.1	8.0	1.3	23.2

Table 4.—Average Yield per Seeded Acre of Various Crops by District, Central British Columbia, 1953-55.

Crop	Terrace	Hazelton	Smithers	Burns Lake	Vanderhoof	Prince George	McBride
	—tons—						
Oats	1.25	0.30	0.78	0.62	0.74	0.61	1.23
Wheat	—	0.41	0.70	0.54	0.77	0.60	1.26
Barley	—	0.35	0.82	0.64	0.83	0.71	1.18
Mixed hay	1.68	1.98	1.08	0.76	1.03	1.24	1.47
Potatoes	6.55	2.00	8.43	4.91	—	5.64	7.09
Turnips	14.00	5.00	15.27	16.00	—	4.63	12.55
Forage seed:	—pounds—						
Timothy	—	—	136.52	249.47	—	100.00	—
Alsike	—	—	—	—	333.33	53.74	99.11
Timothy-Alsike	—	—	126.06	—	—	—	—

Table 5.—Average Investment by Type of Farm Central British Columbia—1953-55

Type of Farm	Land		Buildings		Equipment		Livestock	Crops	Feeds and Supplies[a]	Total
	Improved	Unimproved	Dwelling	Other	Special	General				
Dairy:										
Investment—	$6,607	1,588	3,289	5,707	2,996	2,812	4,185	396	23	27,603
Per cent	23.9	5.8	11.9	20.7	10.8	10.2	15.2	1.4	0.1	100.0
Livestock:										
Investment—	$5,926	1,788	2,735	3,660	2,804	2,138	4,435	490	37	24,013
Per cent	24.7	7.4	11.4	15.2	11.7	8.9	18.5	2.0	0.2	100.0
Livestock-crop:										
Investment—	$5,653	1,534	2,164	3,184	2,602	1,758	3,176	629	28	20,728
Per cent	27.3	7.4	10.4	15.4	12.6	8.5	15.3	3.0	0.1	100.0
Crop-Livestock:										
Investment—	$6,958	1,247	3,258	2,339	1,980	1,761	1,943	570	32	20,088
Per cent	34.6	6.2	16.2	11.7	9.8	8.8	9.7	2.8	0.2	100.0
Part-time:										
Investment—	$3,159	1,711	2,441	2,125	2,280	1,513	1,508	380	18	15,125
Per cent	20.8	11.3	16.1	14.1	15.1	10.0	10.0	2.5	0.1	100.0
Off-type:										
Investment—	$2,710	1,506	2,088	2,357	2,000	1,632	2,270	294	11	14,868
Per cent	18.2	10.1	14.0	15.9	13.4	11.0	15.3	2.0	0.1	100.0
Crop:										
Investment—	$4,403	967	1,395	1,861	2,527	1,898	605	772	8	14,436
Per cent	30.5	6.7	9.7	12.9	17.5	13.1	4.2	5.3	0.1	100.0
Subsistence:										
Investment—	$4,033	1,255	1,527	1,732	2,101	1,825	1,679	165	8	14,324
Per cent	28.1	8.8	10.7	12.1	14.7	12.7	11.7	1.1	0.1	100.0
Poultry:										
Investment—	$3,144	1,467	1,794	2,471	1,523	1,616	1,354	331	—	13,700
Per cent	23.0	10.7	13.1	18.0	11.1	11.8	9.9	2.4	—	100.0
All Farms:										
Investment—	**$5,073**	**1,550**	**2,463**	**3,040**	**2,449**	**1,907**	**2,806**	**472**	**24**	**19,783**
Per cent	**25.7**	**7.8**	**12.4**	**15.4**	**12.4**	**9.6**	**14.2**	**2.4**	**0.1**	**100.0**

[a] Purchased.

Fifty-five per cent of the farms used fertilizers; the average amount was a little over one ton per farm and the average expense $94 per farm.

Farm Investment.—Total farm investment averaged $19,783 per farm and ranged from $13,700 for the average poultry farm to $27,603 for the average dairy farm (Table 5). Average investment in the land for specific types of farm ranged from 28 to 41 per cent, in buildings from 23 to 33 per cent, in equipment from 19 to 31 per cent and in livestock from 4 to 19 per cent.

The working capital, consisting of special and general equipment, livestock, crops, purchased feeds and supplies, averaged about 39 per cent of all capital investment, per farm, and ranged from about 35 per cent on poultry farms to about 42 per cent on off-type farms.

Livestock.—In order to provide a ready comparison of livestock numbers, among different types of farms, the different kinds of livestock were converted into animal units, on the basis of the relative amounts of feed consumed. As could be expected, the number of animal units varied considerably among the different types of farms, ranging from an average of four on crop farms to 33.3 on livestock farms (Table 6).

The average number of total animal units per farm was the highest in the Burns Lake and Vanderhoof districts, about 27, and the Hazelton district, about 26, and lowest in the McBride and Terrace districts, about 15 and 6 respectively (Table 7).

Table 6.—Average Number of Animal Units per Farm, by Farm Type, 176 Farms, Central British Columbia, 1953-55

Type of farm	Number of farms	Cattle	Hogs	Sheep and goats	Poultry	Horses	Total
		—animal units—					
Livestock	42	24.9	2.0	2.3	2.0	2.1	33.3
Dairy	18	28.2	0.3	0.1	0.9	1.2	30.7
Livestock-crop	32	19.2	1.2	0.3	1.5	2.3	24.5
Off-type	9	13.5	0.4	2.5	1.6	4.1	22.1
Crop-livestock	17	12.8	0.3	—	1.2	2.1	16.4
Subsistence	10	8.4	0.3	1.8	0.7	2.3	13.5
Poultry	9	4.5	0.6	—	5.4	1.4	11.9
Part-time	229	8.8	0.7	0.2	0.7	1.3	11.7
Crop	10	2.8	0.2	—	0.2	0.8	4.0
All farms	**176**	**16.6**	**0.9**	**0.9**	**1.5**	**1.9**	**21.8**

Table 7.—Average Number of Animal Units per Farm, by District, 176 Farms Central British Columbia, 1953-55

District	Cattle	Hogs	Sheep and goats	Poultry	Horses	Total
	—animal units—					
Terrace	4.2	0.1	—	0.9	0.7	6.0
Hazelton	20.8	0.3	0.6	1.0	3.2	25.9
Smithers	17.9	0.8	0.4	1.4	1.6	22.1
Burns Lake	21.2	0.3	0.8	1.1	3.1	26.5
Vanderhoof	18.7	1.0	2.8	1.6	2.6	26.7
Prince George	14.3	1.2	0.5	1.9	1.3	19.2
McBride	9.0	3.1	0.3	0.8	2.2	15.4
All farms	**16.6**	**0.9**	**0.9**	**1.5**	**1.9**	**21.8**

Table 8.—Average Man-Equivalents, Productive Man Work Units, and PMWUs per Man Equivalent on the Farm, by Farm Type 176 Farms, Central British Columbia, 1953-55

Farm type	Number of farms	Man equivalent	Productive man work units	PMWUs per man equivalent
		—number—		—days—
Dairy	18	1.6	443	280
Livestock	42	1.3	350	267
Crop-livestock	17	1.0	245	240
Livestock-crop	32	1.3	298	224
Part-time	29	0.7	147	207
Poultry	9	1.2	229	197
Off-type	9	1.2	219	192
Subsistence	10	1.0	158	153
Crop	10	1.1	149	131
All farms	**176**	**1.2**	**271**	**234**

Cattle was the main kind of livestock on each type of farm, except the poultry farms. Hogs and poultry were found on each type of farm, and one or more horses on most farms. Goats and sheep were few in numbers and found mostly on off-type, livestock, and subsistence farms.

On livestock farms, cattle numbers ranged from about one to 124 head per farm: 14 farms had about 16 or less, 12 had from 16 to about 26, seven had from 26 to about 36, and eight had 36 or more head. On poultry farms, the flocks ranged from 173 to 720 birds: two of the nine poultry farms had from 173 to 190 birds, four had from 335 to 398 birds and three had from 416 to 720 birds.

On the average, the dairy farms had herds of 16 cows per farm, with a mean value per cow of about $196, and producing close to seven thousand pounds of milk per year. The average herd size ranged from five to 27 cows and milk production from 3,963 to 10,776 pounds per cow per year.

According to some of the local farmers, predatory animals constitute the main obstacle to the raising of sheep. This could probably be offset, to some extent, by following the example of those farmers in the Vanderhoof district who attached moth balls to the bodies of their sheep. This proved to be an effective means of repelling predators.

Labor.—Estimates of the amount of hired, unpaid family and operator's labor required to operate the farm business, were obtained from the farmers. These estimates concerned the use of labor during the business year for which these farmers reported on their farm business.

The number of productive man work units (PMWUs) on each farm was calculated in order to supply a measure of the size of business and an indication of the amount of labor required to operate the farm.[1] The number of man-equivalents on each farm was also calculated; it provides a measure of the amount of labor currently available to operate the farm.

The average number of PMWUs per farm ranged from 149 for the crop farms and 158 for the subsistence farms to 350 for the livestock and 443 for the dairy farms (Table 8). The number of PMWUs per man-equivalent which is indicative of extent to which the available labor force is efficiently utilized, ranged from 131 and 151 on the crop and subsistence farms, respectively, to 267 and 280 on the livestock and dairy farms respectively.

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[1] The productive man work units of an enterprise is the number of days of work it would require of one man if operated with average efficiency in utilization of labor.

The number of months of labor used in the farm averaged 12.2 per farm per year, distributed as follows: 8.2 for operator's labor, 2.5 for unpaid family and 1.5 for hired labor. The number of months, of all types of labor, ranged from 7.1 and 8.3 on the part-time and subsistence farms, respectively, to 14.2 and 18.1 on the livestock and dairy farms respectively (Table 9).

The average number of days of hired labor, per farm, per year, varied considerably among the various types of farms and between seasons for each type of farm. The range was from an average of about one and seven days, for subsistence and off-type farms, respectively, to about 51 and 111 for livestock-crop and dairy farms respectively. The seasonal range, on the other hand, was from an average of about five days in the winter season to about 12 in the summer and a little over 13 days in the fall. The dairy farms were the largest and most consistent employers of hired labor, the number of days of hired labor on these farms ranging from about 21 in the winter to about 34 in the summer (Table 10).

Tractors were the main source of farm power: 128 of the 176 farms had one, 27 had two, three had three each, and one farm had four tractors.

Table 9.—Average Months of Total, Operator's, Unpaid Family and Hired Labor by Farm Type, 176 Farms, Central British Columbia, 1953-55

Farm Type	Number of farms	Total labor	Operator's labor	Unpaid family labor	Hired labor
			—months—		
Dairy	18	18.1	9.8	4.0	4.3
Livestock	42	14.2	9.6	2.8	1.8
Livestock-crop	17	13.8	8.9	2.9	2.0
Off-type	9	12.8	9.4	3.1	0.3
Crop	10	10.7	7.5	2.3	0.9
Crop-livestock	17	10.6	8.4	1.1	1.1
Poultry	9	10.5	8.5	1.7	0.3
Subsistence	10	8.3	6.1	2.2	—
Part-time	29	7.1	5.1	1.6	0.4
All farms	**176**	**12.2**	**8.2**	**2.5**	**1.5**

Table 10.—Average Number of Days of Hired Labor, by Season and by Farm Type, 176 Farms, Central British Columbia, 1953-55

Farm Type	Number of farms	Winter[a]	Spring[b]	Summer[c]	Fall[d]	Total
			—days—			
Livestock	42	8.0	10.7	13.1	15.6	47.4
Livestock-crop	32	3.6	8.2	17.6	21.4	50.8
Crop-livestock	17	—	6.0	12.6	11.1	29.7
Dairy	18	20.8	27.7	33.8	29.1	111.4
Crop	10	—	2.6	9.0	11.6	23.2
Poultry	9	—	—	—	6.6	6.6
Subsistence	10	—	—	0.6	0.6	1.2
Off-type	9	2.9	2.9	1.4	—	7.2
Part-time	29	2.7	2.3	1.7	4.2	10.9
All farms	**176**	**5.2**	**8.2**	**11.8**	**13.4**	**38.6**

a) Winter: December, January, February
b) Spring: March, April, May
c) Summer: June, July, August
d) Fall: September, October, November.

Receipts and Expenses.—Current receipts, for the 176 farms, averaged $2,780 and current expenses $1,838 a year, expenses equalling about 66 per cent of receipts (Table 11).

Dairy farms, on the average, had the highest receipts, these receipts amounting to $6,913 per farm compared with $3,164 and $3,034 for the livestock and poultry farms respectively, the two types of farms with the next highest averages. Part-time and subsistence farms had by far the lowest averages, at $874 and $469 per farm respectively.

On many farms livestock and livestock products were the main sources of current farm receipts and livestock and machinery the major items of current expenses.

Expenses exceeded receipts, on the average, on part-time and subsistence farms; expenses as a percentage of receipts amounting to 137 per cent for part-time farms and as high as 182 per cent for subsistence farms. The lowest ratios were for the more intensive types like poultry and crop farming.

Average total costs were distributed as follows, in order of size: capital expenses, depreciation charges, and expenses for livestock and machinery.

Table 11.—Average Current Receipts and Operating Expenses per Farm, by Farm Type, 176 Farms, Central British Columbia, 1953-55

Farm type	Number of farms	Receipts	Expenses	Expenses divided by receipts
		-dollars-		—per cent—
Dairy	18	6,913	4,429	64.1
Livestock	42	3,164	1,910	60.4
Poultry	9	3,034	1,419	46.8
Crop-livestock	17	2,708	1,570	58.0
Crop	10	2,612	1,228	47.0
Livestock-crop	32	2,575	1,824	70.9
Off-type	9	2,230	1,135	50.9
Part-time	29	874	1,197	137.0
Subsistence	10	469	852	181.7
All farms	**176**	**2,780**	**1,838**	**66.1**

Table 12.—Receipts and Financial Factors According to Farm Types 176 Farms, Central British Columbia 1953-55

Farm type	Number of farms	Investment per man equivalent	Receipts as a percentage of investment	Rate of investment turnover	Expenses as a percentage of receipts	Receipts per cultivated acre	Expenses per cultivated acre	Net receipts per cultivated acre
		—$—	—per cent	—years—	-per cent-	—$—	—$—	—$—
Part-time	29	20,831	5,83	17.15	137.00	13.73	18.81	–5.08
Crop-livestock	17	19,762	13.48	7.42	57.98	24.99	14.49	10.50
Dairy	18	18,698	22.41	4.46	64.07	55.29	35.42	19.87
Livestock	42	18,256	12.96	7.72	60.38	30.90	18.66	12.24
Livestock-crop	32	16,056	11.78	8.49	70.86	20.60	14.60	6.00
Subsistence	10	13,880	3,28	30.49	181.67	7.35	13.35	–6.00
Off-type	9	12,624	15.00	6.67	50.88	21.26	10.82	10.44
Crop	10	12,052	19.88	5.03	47.03	51.90	24.41	27.49
Poultry	9	11,856	22.15	4.51	46.76	59.33	27.74	31.59
All farms	**176**	**17,058**	**13.41**	**7.46**	**66.13**	**29.15**	**19.28**	**9.87**

Financial Factors.—An analysis of the principal factors relating to the financial aspects of the farm business indicates the financial status or the progress made by a farmer or group of farmers.

Investment per man-equivalent was the largest on farms with a more intensive type of operation and organization such as the dairy, livestock and crop-livestock farms, and on farms like the part-time farms where farming facilities were not utilized to the fullest (Table 12). On poultry farms, investment consisted mostly of livestock and buildings and small outlays for machinery. On crop farms, it consisted mainly of machinery and buildings with sometimes a small livestock complement.

Receipts, as a percentage of investment, were highest on specialized farms with a single enterprise such as the dairy, crop and poultry farms. Receipts were lower on multi-enterprise farms and on those with large livestock enterprises other than dairy.

AGRICULTURE AND THE COMMON MARKET[1]

The Treaty[2] establishing the European Economic Community—or the Common Market—went into effect on January 1, 1958. The first major activity of the "Six"—Belgium, France, the Federal Republic of Germany, Italy, Luxembourg and the Netherlands—began on January 1, 1959 with the start of a 12-15 year program of tariff adjustments. Tariffs will be cut 10 per cent by the Six for their mutual trade and over-all import quotas will be increased by 20 per cent.[3] The Treaty is a formidable document of 181 pages with 150 pages of annexes. Many of its provisions are quite specific but the Treaty is more in the nature of a statement of broad principles and guide-lines than of detailed programs and mechanisms. The resolution of many aspects is left for the future, and "escape" clauses are provided for meeting unexpected difficulties. The objective is not only to eliminate trade barriers among the Six, but to align their economic, financial, agricultural and social policies as well. Article 2 states:

> The Community's mission shall be, by establishing a common market and gradually removing differences between the economic policies of Member States, to promote throughout the Community the harmonious development of economic activities, continuous and balanced expansion, increased stability, a more rapid improvement in the standard of living and closer relations between its Member States.

The major provisions of the Common Market Treaty would:

1. Establish a common customs tariff and a common commercial policy toward countries outside the Community;
2. Remove customs duties and quotas among Member States;
3. Remove obstacles to the free movement of persons, services and capital between the Member States;
4. Ensure relatively free competition in the Common Market;
5. Set up a Social Fund to help labor adjust to a changing market, an

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[1] Prepared by E. Jaska and Frank Shefrin.

[2] Treaty establishing the European Economic Community and connected documents. Brussels. Secretariat of the Interim Committee for the Common Market and Euratom.

[3] The *Bulletin from the European Community* of December 1958, stated that "On January 1, all bilateral quotas will be transformed into global quotas. The total value of each country's import quotas will be enlarged by 20 per cent above the 1956 level. There will be a minimum quota increase of 10 per cent for each product. Moreover, all quotas amounting to less than three per cent of the national production level must be raised to the minimum of three per cent."

Investment Bank to finance projects regarded as important by the Community, and a Development Fund for use in the overseas territories of some Member States;

6. Establish common agricultural and transport policies.

One of the most notable features of the Treaty is that it sets up a timetable for the introduction of these measures. It provides for a 12-year transitional period, divided into three four-year stages during each of which there is a specified "group of actions which shall be undertaken and pursued concurrently". The passage from one stage to the next is governed by various conditions; however, the transitional period which began January 1, 1958 may not be extended beyond 15 years, that is, 1973 for most of the matters covered by the Treaty. At the end of this period the Common Market will become a reality (Article 8).

The agricultural policy of the Community is based on the provisions of the Treaty. Besides the general provisions that cover agriculture and other sectors there is a section outlining the special measures for agriculture and describing the main features of a future common agricultural policy.

Economic Importance of the EEC.—The six countries making up the European Economic Community will have a total population of nearly 165 million. The economic importance of this Community is shown in Table 1.

The Common Market countries play a particularly important role in world trade, having extensive trade relations with all regions of the world. Their imports (including intra-trade) rose from 19 per cent of the world total in 1951 to 23 per cent in 1956, when they exceeded $22 billion. In the same period, their exports rose from 18 to 21 per cent of the world total, amounting in 1956 to some $20 billion.

Although about one-fourth of those figures represents trade between the Six themselves, the Community will nevertheless be the largest customer of the outside world, surpassing all other unified tariff areas, including the United States.

Table 1.—Exports, Imports and Manufacturing Production in Selected Areas, Annual Average, 1953-55 [a]

(Value in thousand million dollars f.o.b. and per cent of world total)

	EEC	Other Western European countries	North America and Japan	World total (excl. USSR E. Europe and mainland China)
Exports f.o.b.				
(value)	16.2	14.0	18.4	75.3
(per cent)	22	19	24	100
Imports, f.o.b.				
(value)	16.0	16.2	16.7	75.3
(per cent)	21	22	22	100
Manufacturing				
Value added (1953 prices)				
(value)	45.4	30.4	131.4	225.1
(per cent)	20	14	58	100

[a] Source: GATT, *Trends in International Trade.* A report by a panel of experts. Geneva. October 1958. p. 115.
GATT, Trade Intelligence Paper No. 6, *The Possible Impact of the EEC, in particular the Common Market, upon World Trade,* December 1957.

Agricultural imports of the six Common Market countries, including trade among the six partners, rose from $7.1 billion to $9.2 billion in the 1953-1956 period, accounting for more than one-fourth of total world trade in agricultural products. The agricultural trade of the six countries with other areas (including Associated Territories and Overseas Departments), averaging about $7.2 billion in the 1954-1956 period, surpassed agricultural purchases of the United Kingdom and the United States, valued at about $6.4 and $5.2 billion, respectively, in the same period.

Textile fibers, accounting for more than 20 per cent of the value of gross imports, remained by far the most important item among agricultural purchases of the six countries. Grain, fruit and vegetables, wood products, the group consisting of coffee, cocoa, tea, and spices, and the group including oilseeds, oils, and fats represented each about 10 per cent of imports. All remaining agricultural commodities imported by the Common Market countries account for little more than one-fourth of the total bill for such products. Among these, livestock, meat, fish, and dairy products taken together amounted again to about another 10 per cent of the total.[1]

Canada's exports of agricultural products to the Common Market area, from 1952 to 1957, averaged $168 million or 17 per cent of its agricultural exports to all countries; they reached a high of $237 million in 1952 and a low of $110 million in 1955 but increased again to $187 million in 1956 and $180 million in 1957.

Wheat exports averaged 63 million bushels valued at $112 million or 67 per cent of the total agricultural exports during the six-year period; other grains accounted for $26 million or 19 per cent; and oilseeds (mainly flaxseed) and oilseed products over $14 million or nine per cent.

Agricuture in the EEC.—The agricultural industry, as shown in Table 2, is not of equal importance to all the members of EEC.

Table 2. Agriculture in the National Economy[1]

	Agricultural population as a percentage of non-agricultural population [a]	Agricultural output as a percentage of gross national product [b]	Agricultural exports as a percentage of agricultural imports [c]
Western Germany	15	9	10
Belgium	13	8	28
Luxembourg	17	10	
France	25	16	57
Italy	44	23	80
Netherlands	14	11	150

[1] P.E.P. *Agricultural Policy in the European Economic Community.* Occasional Paper No. 1. November 21, 1958. London. (The data in this table as published were taken from *Statisques Agricoles de Base* (EEC) Brussels. June 1958.)

[a] At dates ranging from 1946 to 1950.
[b] In 1955—for France 1952.
[c] In 1955.

Agricultural output in the six countries made a marked recovery since the end of World War II; by 1956-57 it was 25 per cent above that in the immediate prewar period. This expansion has been characterized by large gains in crop yields and efficiency in animal production. The rate of gain in total output and efficiency has varied for the Six with the Netherlands showing a high level of productivity and Italy being at the bottom of the range. The area is self-sufficient in butter and cheese but a net importer of wheat, barley, corn, tobacco and a marginal net importer of beef, veal and pork.

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[1] Freire R. *Plans for the European Common Market and their Possible Repercussions on Exporters of Agricultural Commodities.* FAO Monthly Bulletin of Agricultural Economics and Statistics. Vol. VII, No. 4. Rome, April 1958.

The EEC countries have their own agricultural problems. They all have to contend with levels of agricultural incomes lower than those of other sectors of the economy and the instability of agricultural prices. They have programs aimed at increasing productivity through the consolidation of small holdings, land improvement, assistance in purchase of farm machinery and other requisites. All governments intervene in the marketing and pricing of agricultural products. In countries which are importers of foodstuffs, the traditional method of supporting farm incomes and avoiding price fluctuations is by control of imports, principally by tariffs and import quotas. Some of the most important types of price intervention are: fixed prices, where the whole supply of a product is sold at a predetermined price, usually to a single buying agency; minimum prices, where an official or officially-supported agency undertakes to buy the product at a given price whenever the market value falls below this price; and target prices, where an average price is stated as an objective for a season and a marketing agency may intervene by buying, selling or stocking to help secure this price. In the case of a product for which a country is a net exporter, direct or indirect export subsidies may be applied, often in addition to domestic price supports.

Agriculture is thus largely a protected industry—with over-all objectives of increased output, greater efficiency and higher levels of income. Article 39 of the Treaty specifically incorporates these objectives:

(*a*) to increase agricultural productivity by developing technical progress and by ensuring the rational development of agricultural production and the optimum utilization of the factors of production, particularly labor;

(*b*) to ensure thereby a fair standard of living for the agricultural population, particularly by the increasing of the individual earnings of persons engaged in agriculture;

(*c*) to stabilize markets;

(*d*) to guarantee regular supplies; and

(*e*) to ensure reasonable prices in supplies to consumers.

The Treaty

The following section outlines the major articles of the Treaty. Agriculture is subject to same general provisions, and there are articles dealing specifically with agriculture.

2. **The Customs Union.**—The Customs Union involves progressive abolition of customs duties between the member countries and the adoption of a common external tariff. Article 12 forbids the imposition of any new customs duties and any increase in existing duties. The next five Articles (13-17) prescribe conditions for the progressive reduction of duties in force on January 1, 1957. The goal to be achieved is at least a 25 per cent reduction of the duty on each product by the end of the first stage, attaining 50 per cent by the end of the second stage and a termination of duties at the end of the transitional period. Duties levied for purposes of revenue rather than for protection will also be reduced or at least replaced by non-discriminatory internal taxes. This progressive lowering of tariff barriers is reinforced by the Treaty which prescribes the gradual abolition of import quotas. A summary of these reductions is given in Table 3.

2. **The Common Tariff.**—"The duties under the common customs tariff as regards non-members shall be at the level of the arithmetical average of the duties applied in the four customs territories covered by the Community" (Article 19) and no Member State can unilaterally modify its tariffs. The four customs areas are the Benelux countries, France, Germany and Italy. This would appear to yield a somewhat higher average rate than if the rates were weighted according to the amount of trade engaged in by each country. The Benelux countries import over twice as much as Italy—the former are low-tariff whereas the latter is a high-tariff country. Germany imports somewhat more than France and the former has a lower set of tariffs than the latter. Moreover, special clauses will further increase the average common tariff. For instance, a 10 per cent reduction in Italy's tariffs in 1956 will not be taken into account in calculating the average. In some cases duties for the common tariff have been fixed by mutual agreement rather than by computing an average (List F of the Treaty). Some of these are actually higher than an arithmetic average would be.

Table 3.—Timetable for the Enforcement of Common Tariffs[1]

Period	Duration	Reduction of tariffs between members (as percentages of duties levied on January 1957)		Tariff changes on imports from other countries (as percentages of difference between duties levied by members on January 1, 1957[a] and the common tariff)	
		Average	Minimum for each commodity	Initial differences	
				Not over 15%	Over 15%
		Per cent			
First stage					
1st step	12 months	10	10	0	0
2nd step	18 months	10	5[b]	0	0
3rd step	18 months	10	5[b]	100	30
Total	**4 years**[c]	**30**	**25**	**100**	**30**
Second stage					
1st step	18 months	10	5[b]		0
2nd step	18 months	10	5[b]		0
3rd step	12 months	10	5[b]		30
Total	**4 years**	**30**	**25**	**0**	**30**
Third stage (steps to be agreed to subsequently)					
Total	**4 years**	**40**	**50**	**0**	**40**
Total transition period	**12 years**[d]	**100**	**100**	**100**	**100**

[a] Or fixed subsequently for products included in List G. of the Treaty.

[b] Provided total reductions of 25 and 50 per cent are achieved at the end of the first and second stages, respectively.

[c] May be extended to seven years.

[d] Or up to 15 years should any stages be extended.

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[1] FAO Monthly Bulletin of Agricultural Economics and Statistics. Vol. VII, No. 4. April 1958. p. 6.

Certain commodities have been placed on separate lists which prescribe the upper limit of the common tariff that will prevail after the Common Market is fully established. In most cases this limit is below the arithmetic average of the duties now imposed by the Member States.

3. **Free Movement of Persons, Services and Capital.**—An important characteristic of the Common Market is the free mobility of labor, including agricultural workers and capital between countries. The problem is handled in four parts in the Treaty.

(*a*) With respect to capital the Treaty states in Article 67 that: "Member States shall . . . progressively abolish as between themselves restrictions on the movement of capital belonging to persons resident in Member States and also any discriminatory treatment based on the nationality or place of residence of the parties or on the place in which such capital is invested."

Current payments related to the movement of capital between Member States are to be freed by the end of the first stage—that is, in four years. An exception is made for countries with serious balance-of-payments difficulties.

(*b*) Corollary to the free movement of capital is the right of establishment. Restrictions on the right to set up business, such as agencies, branches or subsidiaries, as well as independent commercial enterprises, are to be gradually eliminated during the transition period.

(*c*) Before the end of the first two years the Commission will outline a program to eliminate discriminatory restrictions on the rendering of services (legal, insurance, banking, etc.) within and by residents of the Community.

(*d*) By the end of the transition period all types of labor, including managerial and professional personnel, will be free to accept employment anywhere within the Common Market.

4. **Free Competition in the Common Market.**—The Treaty prohibits agreements and decisions which prevent the free play of competition within the Common Market by means of: (1) Direct or indirect price fixing; (2) market sharing; (3) limitation or control of markets, production or investment; (4) discriminatory pricing; (5) tie-in sales and contracts.

However, these provisions are inapplicable to agreements, practices or merger decisions "which contribute to the improvement of the production or distribution of goods, or to the promotion of technical or economic progress" so long as the consumers "receive an equitable share in the profits resulting therefrom" (Article 85).

The Treaty also provides for the elimination of rate differentials and other conditions imposed by carriers which discriminate against the movement of goods on the basis of the country of origin or destination. Charges by carriers for crossing frontiers may not exceed a reasonable level. Common rules are to be made for transport between members of the EEC, and conditions for national carriers crossing frontiers are to be established.

5. **Some Other Integration Measures.**—There are sections of the Treaty dealing with balance-of-payment difficulties, a European Social Fund and Investment Bank, and with the overseas territories.

6. **Administration of the EEC**[1].—The agencies of the European Economic Community which have some degree of supra-national authority are the following:

(*a*) An Assembly of representatives, initially appointed by the parliaments of the six countries and later elected by direct universal suffrage. The Assembly will meet once a year to discuss the report of the Commission; if its report should be rejected by two-thirds of the representatives the Commission must resign;

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[1] Treaty Establishing the European Economic Community and Connected Documents. Brussels. Secretariat of the Interim Committee for the Common Market and Euratom. pp. 133, 136, 151.

(*b*) A Council consisting of the Ministers representing the Governments of the member countries, vested with the supreme power of decision in all matters relating to the common market. Some of its decisions will be taken by simple majority vote whereas others will require unanimity;

(*c*) A Commission consisting of nine members, no more than two of whom may represent any one country. The members of the Commission, although nominated by their respective countries, will not be responsible or answerable to their Governments, as their actions will be governed exclusively by the terms of the Treaty and by the decisions of the Council of Ministers and of the Court of Justice. This Commission will supervise the execution of the Treaty, make recommendations to the Council of Ministers and take such action as may be required to enforce the Council's decisions.

(*d*) A Court of Justice, consisting of seven members nominated by Governments, which will be responsible for interpreting the Treaty and ruling on any disputes between Member countries involving Governments or private enterprises.

The Commission and Council have already been appointed. Likewise, the Assembly is already in being, inasmuch as it serves the European Coal and Steel Community (and will also serve Euratom) as well as EEC. The Court of Justice, which is yet to be appointed, will also serve all three organizations.

In addition to these main institutions, others will be set up, such as the Economic and Social Committee, which will have advisory functions and consist of representatives of all sectors of activity in the six countries; the Advisory Monetary Committee, which will be responsible for observing the behavior of the balance of payments in the six countries and for making recommendations; and the executive and advisory subsidiary bodies of the Community's dependent agencies, such as the European Investment Bank and the Social Fund for the readjustment of manpower.

The individual countries are represented in the main organization as follows:

Representation in Organs of European Economic Community

Country	Votes in Council	Delegates to Assembly	Delegates to Economic and Social Committee
France	4	36	24
Germany	4	36	24
Italy	4	36	24
Belgium	2	14	12
Netherlands	2	14	12
Luxembourg	1	6	5
Total	**17**	**142**	**101**

The Treaty and Agriculture.—According to Article 38 the "Common Market shall extend to agriculture and trade in agricultural products. Agricultural products shall mean the products of the soil, of stock-breeding and of fisheries as well as the products after the first processing stage which are directly connected with such products". The Treaty states (Article 40) that this common organization shall be established not later than at the end of the transitional period.

Agricultural tariffs will be abolished by stages over the transitional period of 12 to 15 years; the first reduction of 10 per cent began on January 1, 1959. The arrangements concerning import quotas are more complicated. Member countries are bound not to introduce any new quantitative restrictions on trade among themselves or to make existing quotas more restrictive. They undertake to convert bilateral quotas between themselves into global quotas open to all member countries and to increase them by stated amounts, or if there is no such bilateral quota a global quota must be established; in either case the global quota must in the first instance be at least three per cent of the national output of the product in question. The first changes took place at the same time as the first tariff reduction. Thereafter the global quotas will be increased by stages and are to disappear at the end of the transitional period.

Basically, the rule concerning the new common tariff rates is that they shall correspond to the arithmetic average of those in effect on January 1, 1957, in the individual countries[1]. For grains and wheat flour the rate will be the arithmetic averages of 20 per cent for wheat and 30 per cent for wheat flour. The new rate for unmanufactured tobacco is 30 per cent, for oranges 15-20 per cent. Raw materials are to be admitted at a tariff rate not exceeding three per cent. Cotton is classified as a raw material rather than an agricultural product and will be free of duty. But what the rate for any commodity will ultimately be, after negotiation and agreement with other GATT member countries remains to be seen[2].

It is not expected that changes will take place rapidly in agriculture. The Treaty has special provisions for trade in agriculture aimed at easing the impact of tariff reductions and abolition of quotas[3]. During the 12-15 year transition

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[1] Ad Valorem Tariffs in the Common Market, Selected Commodities.

Commodity	Tariffs in force				Common Tariffs
	Benelux	Western Germany	France	Italy	
Beef	12	10	35	18	20
Butter	15	25	25	30	24
Wheat	0	20	30	30	20
Maize	0	0	30	5	9
Tobacco	8[a]	32[a]	[b]	[b]	30
Oilseeds	0	0	5–10	0–10	0

[a] Approximate equivalent of specific tariff.

[b] Government imports.

[c] *Source:* Freire, R. *Plans for the European Common Market and Their Possible Repercussions on Exporters of Agricultural Commodities. FAO Monthly Bulletin of Agricultural Economics and Statistics.* Vol. VII, No. 4. April 1958. p. 5.

[2] Friedman, Karen J. *The Agricultural Import Trade of the Common Market Countries.* Washington, D.C. Foreign Agricultural Service, USDA. February, 1958.

[3] It is of interest to note the comments made in this respect by Marc Ouin in an OEEC publication entitled, *The OEEC and the Common Market,* published in April 1958. He states that "Until they (i.e. The Six) do organize their markets, however, (and they can only do so gradually) they have felt bound to keep national markets in separate compartments by means of minimum price schemes. By and large, these schemes mean that a country of the Community may suspend imports of agricultural products from a fellow member if they are offered at a price below that prevailing on its own market. It is obvious that as soon as a country can object to the importation of a product because it is cheaper than a similar domestic product, competition is no longer possible. At the same time, as the transitional period matures and market organization gets under way recourse to minimum price systems will be more and more closely controlled by the institutions of the Community. In the case of certain products the Six have also provided for long-term contracts, the broad purpose of which is to enable those of them who are exporters of agricultural products (Netherlands, France, Italy) to obtain guaranteed outlets on the market of the importing country, Germany.

period—until agricultural policies are integrated—member countries, with domestic agricultural prices imperiled by the steps taken toward unification, may impose minimum prices on the products imported from other member countries (Article 44). This provides a means by which a member country can continue to protect its domestic producers, in spite of the reduction in tariff barriers and elimination of quotas, if they are in danger of being underpriced by imports from other members.

The Treaty states that the minimum import prices system shall not be used to such an extent as to impede the expansion of trade. It requires the Commission to determine "objective criteria" for fixing minimum prices. These criteria should take account both of "average national costs of production" and of the need to promote "the progressive improvement of agricultural operations and the adjustments and specializations necessary within the Common Market". The intention seems to be that minimum prices should be fixed sufficiently below "average production costs" to induce some shift from high-cost to low-cost production areas. Article 44 also specifies that at the end of the transitional period "a table of minimum prices still in force shall be drawn up". It does not say that they shall necessarily be abolished at this stage: it declares that the Council "shall determine the system to be applied within the framework of the common agricultural policy".

In addition to minimum prices, there is a system of countervailing charges which may be fixed by the Commission and which may be applied to a product traded between two member countries when in the exporting country the product in question "is the object of a national market organization or of any internal regulation with equivalent effect, either of which affects the competitive position of a similar production in another Member State" (Article 46). The use of this device does not appear to be restricted to the transitional period.

Another transitional device during the first stage, which may be used until common market organizations are developed, is a system of preferential purchasing consisting of long-term contracts between exporting and importing member countries (Article 45). The quantities involved in these contracts will be determined on the basis of the average volume of trade in the products in question between the contracting countries in the three years preceding the entry into force of the Treaty. The contracts are to provide for an increase in the previous average volume of trade and this increase must be "within the limits of existing requirements, due account being taken of traditional trade currents". As for prices, such contracts "shall enable producers to dispose of the agreed quantities at prices progressively approximating to those paid to national producers in the home market of the purchasing country. This approximation of prices shall proceed as steadily as possible and shall be completed not later than at the end of the transitional period". The long-term contract system applies to products in which there is state trading and is likely to be adopted only for wheat and possibly sugar.

Article 40 of the treaty mentions as possible tools of the ultimate common marketing policy: price regulation, subsidies for production and marketing, stocking systems and the common mechanisms for stabilizing imports and exports. The actual measures of agricultural policy to be adopted remain to be worked out, however. According to Article 43, the Commission . . . "shall, after consulting the Economic and Social Committee and within a period of two years after the date of the entry into force of this Treaty (December 31, 1959), submit proposals concerning the working out and putting into effect of the common agricultural policy, including the substitution of national organization by one of the forms of common organization . . . as well as concerning the putting into effect of the measures".

The adopted proposals will take effect gradually, but the process of integration must be completed by the end of the transition period.

The Common Market and the Free Trade Area

The United Kingdom urged the establishment of a Free Trade Area in association with the EEC, enlarging the area of unrestricted European trade of the Six to all the 17 members of the OEEC[1]. The European Economic Community differs from the Free Trade Area in two main aspects. First, in addition to the elimination of customs duties among the six member countries, the Common Market implies the equalization of the tariff systems of the six countries in relation to the rest of the world. This tariff equalization does not exist in the free trade area. Second, the maintenance of equilibrium in the international payments of the member countries calls for a high degree of coordination in regard to monetary and fiscal policies, on the one hand, and a common foreign trade policy among the six countries, on the other. To administer this and other aspects of the Community, supra-national organs are to be established with autonomous executive powers. This is not the case in regard to the free trade area, where the establishment of such supra-national agencies is not envisaged, since it is expected that each country will not have to renounce its right to negotiate trade treaties, payments agreements, tariff modifications, etc., directly with third countries.

However, at present the Free Trade Area (FTA) proposal is in abeyance, although much work has been done through the OEEC to find some means of reconciling the two approaches.

The EEC and the Trade Outlook for Agricultural Imports

The idea of a Common Market has been generally supported with the proviso that this new economic region be "outward" rather than "inward" looking. The EEC countries have repeatedly stated their intention of maintaining trading relations with countries outside the EEC.

At their December 3, 1958 meeting in Brussels, the Community's Council of Ministers agreed that member states would take the following additional measures vis-a-vis non-member countries beginning January 1, 1959:

1. To reduce by 10 per cent their existing tariffs vis-a-vis all other OEEC members and all other members of the General Agreement on Tariffs and Trade (GATT), as well as those non-members of GATT which benefit from the most-favored-nation clause. It will apply only to tariffs which are at present above the level of the Community's future common tariff; it will be provisional and unilateral, although reciprocal gestures would be welcomed.
2. To make, vis-a-vis other members of OEEC, a 20 per cent increase in quotas for industrial products at present above the level of liberalization realized under the OEEC Council decisions of January 14, 1955, these increases to be on a basis of reciprocity. One half of this increase, 10 per cent, would be obligatory for each quota. The second 10 per cent would not necessarily apply to each quota but could be concentrated on those products of particular interest to the other countries in question.
3. For agricultural products (on which a standstill agreement already exists) the 20 per cent quota increase would not apply, but tariffs would be reduced by 10 per cent on the same basis as noted in item No. 1.

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[1] The Organization for European Economic Co-operation comprises the following member countries: Austria, Belgium, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Sweden, Switzerland, Turkey and the United Kingdom. The United States and Canada although not members of the Organization participate in its work as associate members and Yugoslavia is represented by an observer. Spain participates as a full member in the work of the agricultural bodies of the Organization.

According to the Food and Agriculture Organization the implementation of the Treaty is likely to stimulate agricultural production in the European Economic Community to take advantage of the enlarged market and of greater possibilities of specialization. The increase of income which is expected to follow the establishment of the Common Market should also expand demand for agricultural commodities, thereby encouraging increased production. However, much will depend on the common agricultural policy and marketing regulations finally adopted, as well as on the changes made in existing national controls and support measures for agriculture. No specific conclusions can be made at this stage, but there are indications that the Common Market countries aim at self-sufficiency for most of the commodities they are able to produce, and to obtain some surpluses for export as well. The intention set forth officially by some of the six countries to bridge the gap between agricultural and non-agricultural per caput incomes strengthens the impression that agricultural expansion will be encouraged within the Common Market Area.

Although the European Economic Community is still a long way from self-sufficiency in grain,[1] the Common Market may accelerate the expansion in production. The report published by the FAO states that suppliers of special grades, such as durum wheat, may be less affected, but it is likely that all exporters of bread grain will have to rely almost entirely on population increases to maintain their markets within the area.

Exporters of feed grain are in a more favorable position. The emphasis the six countries place on meat production should strongly affect demand for feed grain. Therefore, in spite of the substantial crop increases planned by the six countries, imports are likely to remain high for a long time to come. Similar considerations may apply to all imports of feedstuffs.

Consumption of fruit and vegetables may increase appreciably as a result of enlarged prosperity in the Community. However, the European Economic Community is already planning appreciable expansion in this sector and this fits particularly well with the policy designed to raise the income of small farmers.

The Common Market Area is a net exporter of dairy products. This means that the Community has to create its own demand for any additional output of these products. Some gains in income, particularly in areas where it is low, could help in this connection. The natural increase in population should also provide additional outlets. Dairy products are strongly supported by governments and the common tariff does not favor competition from outsiders. Therefore, as support to dairy farmers is likely to continue, the Common Market as a whole should gradually become a lesser market for outside exporters. In spite of substantial increases in production, purchases of eggs abroad may remain appreciable.

Expansion of livestock and meat production is perhaps the first among the agricultural aims of the Common Market countries. Present efforts to stimulate production might ultimately lead to some decrease in import requirements and the common tariff is not helpful to foreign exporters. Although domestic production of meat nearly matches consumption with the six countries taken as a whole, in an expanding economy domestic production might still take some time to cope with demand, leaving thus for the time being some opportunities for exporters.

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[1] The main part of the commodity review in this section has been taken from Freire, R., *Plans for the European Common Market and their Repercussions on Exporters of Agricultural Commodities. FAO Monthly Bulletin of Agricultural Economics and Statistics.* Vol. VII, No. 4. Rome. April 1958. pp. 4-17. Reference is made only to agricultural commodities of interest to Canada.

The FAO article does points out that difficulties in harmonizing details of financial and agricultural policies, including price supports between the Six countries, are very great. Imports from third countries will be affected by developments in production and trade within the Community. A danger is indicated in the report of the Committee of Experts (Haberler Report) to the GATT[1]: "The maintenance of an apparatus of control over the internal trade in agricultural products would enable the European countries to differentiate in their treatment of different agricultural products on lines which might result in the sheltering of uneconomic lines of production".

The Political and Economic Planning (PEP) organization in its pamphlet *Agricultural Policy in the European Economic Community* indicates that there are points on which the EEC's future agricultural policy remains obscure. The pamphlet goes on to state that "It does not seem likely that present national policies in the six countries will be radically modified in the near future. Existing measures of agricultural support will persist, and will only gradually be merged into common systems. Agricultural trade within the Community may increase slowly and the pattern of production may eventually be modified by the competitive influences, but any effects of the gradual removal of existing barriers to trade will be carefully tempered"[2].

On the other hand "S.L. Mansholt, Vice President of the European Economic Commission, told members of the American Farm Bureau Federation in a radio interview from Rotterdam November 29, 'What the Six want is to have an open market. We do not want to be exclusive.'

"The Vice President predicted that it will take three to four years to develop plans on agricultural policy. Within six years, he said, the greater part of that policy will be in force in the six countries of the EEC. Asked whether this would tend to make it more difficult for the United States to enter the European market, Mr. Mansholt said: 'It is a question of reciprocity. That depends on the trade relations to be built up'."[3]

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[1] GATT. *Trends in International Trade.* A report by a panel of experts. Geneva. October 1958. p. 118.

[2] P.E.P. *Agricultural Policy in the European Economic Community.* Occasional Paper No. 1. 21 November 1958. London. p. 25.

[3] Bulletin from the European Community. Information Service. Washington, D.C. No. 33. December 1958. p. 16.

WORLD AGRICULTURE: A REVIEW 1957/58[1]

The year 1957/58 saw a check in the steady postwar rise in world agricultural production. The Food and Agricultural Organization in its annual report, *The State of Food and Agriculture 1958*, attributes this decline in part to weather but also points out that there had been for some years a slowing down in the rate of expansion, especially in the regions of the world with higher levels of income and more advanced agricultures. The preliminary FAO index of world agricultural production (average 1952-53=100) fell back to 119 against 120 in the previous year. World per capita agricultural production declined from 109 in 1956/57 to 107 in 1957/58.

There are a number of underlying factors which in recent years have slowed down the whole tempo of agricultural expansion in the economically more developed countries of the world and, to some extent, in the less developed countries as well.

In the economically more advanced countries agricultural policies are increasingly dominated by the problem of agricultural surpluses. National incomes and consumption levels per caput are already fairly high and the demand for agricultural products rises only slowly, especially in the food-importing countries of Western Europe where population shows relatively little increase. Moreover, much of any increase in demand at the retail level is absorbed by more elaborate processing and distribution services, and a relatively small part is transferred back to the farm. Although recent striking improvements in agricultural methods would make it relatively easy to step up production, any such expansion must be restrained in view of mounting surpluses. The slow growth of demand naturally affects not only farmers in the industrialized countries themselves, but also farmers elsewhere who are dependent on exports to these countries.

The situation is very different in the less developed countries. On the one hand, even small rises in income lead to relatively sharp rises in the demand for food, which are superimposed upon the increase due to the rapid growth of population. On the other hand, in many countries primitive methods of agriculture, together with lack of capital and obsolete systems of land tenure and other institutional difficulties, make it hard to expand production in line with the rapid growth of demand.

These disparities appear to have been intensified by the price policies of the two groups of countries, arising from differences between their social and economic structure. In many of the more developed countries, relatively high farm prices have tended to stimulate production and to restrain consumption, while in many of the less developed countries relatively low ceilings on consumer prices appear often to have had the reverse effect.

The expansion of world agricultural production seems likely to be resumed in 1958/59 after the check in 1957/58. In 1958/59 the weather has been generally more favorable for crop production, notably in the United States, the U.S.S.R., and mainland China, and world production, especially of cereals, will again increase. While some increased consumption is likely, stocks of some commodities (e.g., wheat, coarse grains, and coffee) are likely to be much higher at the end than at the beginning of the 1958/59 season. Prospects for most other crops and for livestock products also indicate a larger outturn. Present trends indicate that milk production in 1958 will show another increase over the previous year of about 2 per cent, much of which is being used for butter. Poultry numbers in the main producing countries have risen considerably and a larger output of eggs (and probably lower prices) are likely in the coming season. Meat production is at a record level in Western Europe; however, the recent expansion of pig numbers has been checked and the pressure of pig meat supplies is expected to ease gradually.

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[1] Extracts taken from *The State of Food and Agriculture 1958*. Food and Agriculture Organization of the United Nations, Rome. September 1958.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

J. F. BOOTH, Director

APRIL 1959 **Vol. XXIX No. 2**

CONTENTS

Page

The Economic Situation 27

Credit Unions in Canada . . . . *V. A. Heighton* 29

The FAO and International Commodity Problems 31

Capital Investment on Grain and Livestock Farms in Manitoba, 1957 . . . . *C. Varkaris* 38

Some Features of the Cattle Enterprise in the Lundar-Eriksdale Area of Manitoba . . . . *J. G. MacKenzie* 41

Publications of the Economics Division 46

Other Publications 47

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Published by Authority of the Honourable Douglas S. Harkness
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
		1935-39=100						1949=100		1935-39=100
1913	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	85.6
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	94.6
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	108.0
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	102.0
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	109.7
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	131.4
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	164.8
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	195.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	208.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	212.4
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	187.2
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	171.9
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	187.8
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	196.3
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	199.6
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	211.5
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	226.5
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	233.0
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	248.4
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	244.6
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	265.8
1956	225.6	214.2	181.6	246.9	234.5	247.6	208.8	118.1	113.4	284.4
1957	227.4	210.8	163.6	258.0	231.0	255.8	211.3	121.9	118.6	284.0
1958	....	....	....	....	....	....	....	125·1	122·1	....
1958										
July	227.0	219.4	159.4	279.3	241.6	....	....	124.7	121.4	279.3
August	226.8	215.9	156.5	275.2	238.5	262.9	213.7	125.2	122.6	275.8
Sept.	227.1	211.1	155.2	266.9	236.1	....	....	125.6	122.9	276.5
Oct.	226.9	211.8	154.4	269.3	236.4	....	....	126.0	123.4	277.2
Nov.	228.5	212.1	155.2	269.1	236.5	....	....	126.3	123.2	280.7
Dec.	229.1	217.6	156.5	278.7	239.3	....	....	126.2	122.2	....
1959										
Jan.	229.7	217·7	156·6	278·7	241·7	....	....	126.1	122.3	....
Feb.	230·8	214·8	155·6	274·0	....	....	....	125·7	121·2	....
Mar.	230·7	....	....	....	....	....	....	125·5	120·0	....
April	....	....	....	....	....	....	....	....	....	....
May	....	....	....	....	....	....	....	....	....	....
June	....	....	....	....	....	....	....	....	....	....

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1956—July 1957 include final barley and wheat payments announced June 11, 1958.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed. fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Investment.—The Minister of Trade and Commerce tabled the report on "Private and Public Investment in Canada—Outlook 1959" in The House of Commons on March 6. Commenting on the report, he said:

> "For the fourth year in succession, capital investment in Canada will exceed eight billion dollars, a more than three-fold increase in a period of 12 years. Present investment plans provide for total new capital outlays in 1959 of $8.3 billion, which is slightly below the $8.4 billion expended in 1958. The over-all total of intended outlays on construction and machinery, including repairs, gives a grand total for 1959 of $11.1 billion, which is exactly the same as for 1958. An examination of preceding survey results shows that, in the past, in comparable situations to that now prevailing in Canada, stated investment plans at the beginning of the year have tended to underestimate the amount of work eventually realized. It is quite possible, therefore, that some further filling out of investment programs will occur during the course of the present year.
>
> "Within the total program, the principal increases appear in commercial and institutional building and government projects. Increased capital outlays are indicated for each of the three levels of government. Provincial and municipal governments and agencies are faced with steadily expanding requirements for roads, schools, hospitals and many types of local improvements. Somewhat easier supply conditions in the construction industry have helped in getting ahead with these programs. The Federal Government also is proceeding with an expanded program of public projects designed to meet the needs for defence installations and other services and to foster national development. Outlays made directly by Federal Departments are estimated to increase by 10 per cent, while expenditures by all three levels of government combined are expected to rise at almost the same rate".

According to the report itself, the background of the 1959 program differs greatly from that of 1958. The slowdown in business activity has given way to a generally strengthened demand. A very large proportion of the planned expenditure for 1959 consists of newly initiated expansion programs instead of carry-over of work from projects started in preceding years.

Domestic Exports.—Canada's domestic exports in January 1959 were ten per cent lower than in January 1958, mainly as a result of large decreases in exports of newsprint, aluminum and products, nickel, copper and products, crude petroleum and cattle. This decline, however, was partly offset by large increases in exports of uranium ores and concentrates, iron ore, asbestos and wood pulp. On the whole, export prices were higher; the lower value is attributable to the reduced volume.

Domestic exports to all countries declined to $343.8 million from $381.8 million in January 1958 and re-exports of foreign products dropped to $6.4 million from $7.8 million.

Exports to the United States declined to $194.6 million in January 1959 from $223.7 million in January 1958. Larger shipments of iron and iron products and of miscellaneous commodities were more than offset by reduced shipments of other commodities. Largest decreases were in animals and animal products, non-ferrous metals and products, and non-metallic minerals and products.

Exports to the United Kingdom dropped to $55.1 million in January 1959 from $61.1 million in January 1958. Increases in agricultural and vegetable products, animals and animal products and miscellaneous commodities were more than outweighed by decreases in exports of other commodities. The chief declines were in the non-ferrous metals and products, wood and wood products, and paper. Domestic exports to other Commonwealth countries rose to $24.8 million from $22.6 million in January 1958. Larger exports to Australia, the Union of South Africa and Pakistan more than offset smaller exports to countries of the West Indies Federation and India.

Exports to Latin American countries declined to $13.8 million in January 1959 from $19.5 million in January 1958. There were declines in exports to Venezuela, Mexico, Cuba and Colombia and increases in exports to Brazil. Exports to European countries totaled $41.3 million in January this year compared with $41.8 million in January last year. Shipments were larger to Belgium, Luxembourg, France, the Federal Republic of Germany, Norway and Switzerland but smaller to Italy, the Netherlands and Sweden.

Imports.—Canada's imports from all countries in November 1958 totaled $455.7 million compared with $450.6 million in November 1957. Because of decreases in all earlier months, except October, the January-November total declined to $4,766.8 million in 1958 from $5,230.8 million in 1957.

Imports from the United States declined to $298.2 million in November 1958 from $299.9 million in November 1957 and January-November imports declined to $3,284.2 million in 1958 from $3,722 million in 1957.

Imports from the United Kingdom declined to $49.2 million in November 1958 from $49.8 million in November 1957 but rose to $486.4 million in the 1958 January-November period from $485.8 million in the corresponding period of 1957. Imports from other Commonwealth countries rose to $22.8 million in November 1958 from $22.7 million in November 1957 but declined to $198.4 million in the 1958 January-November period from $226.3 million in the corresponding period of 1957.

Imports from Latin American countries rose to $31 million in November 1958 from $28.5 million in November 1957 but January-November imports declined to $319.8 million in 1958 from $350.9 million in 1957. Imports from European countries rose to $34.6 million in November 1958 from $28.5 million in November 1957 and to $293.5 million in the 1958 January-November period from $292.6 million in the corresponding period of 1957.

Prices.—Canada's index of farm prices of agricultural products (1935-39=100) was estimated at 241.7 for January compared with 238.6 for December 1958. Higher prices for livestock and potatoes more than offset lower prices for poultry and eggs.

The general wholesale price index (1935-39=100) for January was at 229.7 compared with 229.1 for December and 226.9 for January 1958. The upward movement of the animal products group continued, the index rising to 255.6 from 253.7 in December. Higher prices for poultry, leather, fresh meats and fish accounted for most of the increase but prices for lard and tallow, and eggs, continued to decline. Wood products rose to 300.6 from 298.5, mainly as a result of higher prices for paper board and matches. The chemical products group rose for the fourth consecutive month, the index rising to 185.7 from 184.7. Higher prices for paints and paint materials, inorganic and organic chemicals outweighed lower prices for industrial gases and tanning and dyeing materials.

Milk.—Milk production in Canada in January 1959 was estimated at 1,028 million pounds or about 2.3 per cent more than in January 1958. The December 1958 output increased 3.9 per cent to 1,104.4 million pounds from 1,063.1 million pounds in December 1957. The 1958 output totaled 18,057.1 million pounds or 4.3 per cent more than the total of 17,306 million pounds for 1957. The 1958 output was greater than the 1957 output in all provinces except Nova Scotia. The December 1958 output was larger than the December 1957 output in all provinces except Quebec and British Columbia.

CREDIT UNIONS IN CANADA

V. A. Heighton

Credit unions (caisses populaires) had their start on this continent in the province of Quebec. Since 1936 growth has been steady and at times spectacular. By 1938 all provinces had provincial legislation covering credit unions.

In 1939 there were 844 credit unions with a total membership of 151,554 and assets of $21 million (Table 1). The number of credit unions in 1949 increased to 2,819 with 2,705 reporting a membership of 940,427 and assets of $282 million.[1] The province of Newfoundland was included for the first time. By the end of 1957 all provinces reported 4,396 chartered credit unions.[2] Of these 4,060 reported a membership of 2,084,658 and total assets of $846 million.

Quebec and Ontario account for over one-half of the credit unions in Canada. However, Quebec is well in the lead in the Canadian credit union movement with over half of the members, approximately 60 per cent of the total assets and over one-third of the loans to members.

Table 1.—Growth of Credit Unions—Canada, 1939-1957

Year	Provinces	Credit unions chartered	Members	Members as a percentage of total population	Assets
		—number—		—per cent—	—million dollars—
1939	9	844	151,554	1.3	21
1940	9	1,167	201,137	1.8	25
1945	9	2,219	590,794	4.9	146
1946	9	2,422	688,739	5.6	188
1947	9	2,516	779,199	6.2	221
1948	9	2,608	850,608	6.6	254
1949[a]	10	2,819	940,427	6.9	282
1950	10	2,965	1,036,175	7.5	312
1951	10	3,121	1,137,931	8.1	359
1952	10	3,333	1,260,435	8.7	424
1953	10	3,606	1,434,270	9.7	489
1954	10	3,920	1,560,714	10.3	552
1955	10	4,100	1,731,328	11.1	653
1956[b]	10	4,258	1,870,277	11.6	761
1957[c]	10	4,396	2,084,658	12.6	846

[a] Newfoundland included for the first time.
[b] Revised for Ontario.
[c] Estimated for Ontario.

Bond of Association.—The prospective members of a credit union usually have a common bond of association. This bond may be membership in a parish, club, lodge or labor union, that of employment in a plant, industry or department or that of residents of a rural or well-defined urban community. Data available for 1939 classified 33 per cent of the credit unions as urban and the remainder as "other". Other included membership which was entirely rural or mixed rural and urban.

The annual publications of Credit Unions in Canada report the bond of association as urban, rural, occupational and other. In 1949, all provinces reported a total of 2,819 credit unions. Of these, 422 were urban, 1,671 rural,

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[1] *Credit Unions in Canada*, 1949, Canada Department of Agriculture, Ottawa.

[2] *Credit Unions in Canada*, 1957, Canada Department of Agriculture, Ottawa.

Table 2.—Credit Unions in Canada by Bond of Association, 1957

Province	Community		Occupational	Other[a]	Totals
	Urban	Rural			
	—number—				
Newfoundland	3	58	10	1	72
Prince Edward Island	9	47	3	—	59
Nova Scotia	36	119	44	13	212
New Brunswick	17	98	38	11	164
Quebec	382	798	178	53	1,411
Ontario[b]	48	122	786	459	1,415
Manitoba	6	79	74	51	210
Saskatchewan	—	235	26	23	284
Alberta	34	72	90	56	252
British Columbia	48	89	141	39	317
Totals	**583**	**1,717**	**1,390**	**706**	**4,396**

[a] Associational, fraternal, semi-urban and semi-rural credit unions.
[b] Estimated.

450 occupational and 276 classed as other. In 1957, urban credit unions increased to 583, rural to 1,717, occupational to 1,390 and other with 706, (Table 2). The greatest change in the bond of association is in the number of occupational credit unions and this change has mainly taken place in the province of Ontario. Total credit unions in Ontario advanced from 436 in 1949 to 1,415 in 1957.

To be on a comparable basis with 1939, the 1949 and 1957 occupational credit unions could be included with urban and rural credit unions combined with other.

Savings and Loans.—Member savings consist of shares and deposits and increased from $20 million at the end of 1939 to $264 million in 1949. By 1957 member savings amounted to $782 million or 92 per cent of the total assets, (Table 3). Savings on a membership basis amounted to $107 in 1939, $280 in 1949 and $375 in 1957. Loans increased to $351 million in 1957 from $90

Table 3.—Membership, assets, shares and deposits of Credit Unions by Provinces, 1957

Province	Credit unions chartered	Credit unions reporting	Members	Assets	Shares	Deposits	Loans to members in 1957
	—number—			—thousand dollars—			
Newfoundland	72	49	3,235	340	290	13	263
Prince Edward Island	59	49	9,514	1,366	1,110	102	256
Nova Scotia	212	196	53,545	10,817	9,724	249	6,911
New Brunswick	164	160	76,219	12,167	10,909	129	6,511
Quebec							
Desjardins	1,181	1,169	1,013,400	504,654	33,188	443,921	112,304
Quebec League	213	185	69,925	14,782	8,299	4,899	15,225
Montreal Federation	17	17	38,967	32,068	2,120	27,945	7,452
Ontario[a]	1,415	1,205	443,791	123,875	84,739	23,919	105,792
Manitoba	210	207	67,076	22,425	16,281	3,605	16,265
Saskatchewan	284	275	92,981	44,825	33,685	7,632	20,667
Alberta	252	241	55,126	16,176	13,760	844	11,671
British Columbia	317	307	160,879	62,769	51,436	3,449	48,113
Canada 1957	**4,396**	**4,060**	**2,084,568**	**846,264**	**265,541**	**516,707**	**351,430**
Canada 1956	**4,258**	**3,973**	**1,870,227**	**761,256**	**232,123**	**468,430**	**309,681**

[a] Estimated.

million in 1949 and $9 million in 1939. Total loans since inception have accumulated to over two billion dollars.

Central Credit Unions.—Credit unions have joined together in every province into either regional or provincial organizations or both. These organizations achieve a number of purposes including promotion of the movement, presentation of the movement's views on legislative matters, education and the provision of lending and saving agencies specially designed to serve credit unions.

In some provinces credit union leagues undertake to perform all these functions. In other provinces there is a credit union league or federation which provides promotional, inspection or other services for credit unions while separate institutions have developed to provide financial services. For example, in Quebec, caisses populaires deposit funds in regional caisses populaires and secure loans from them while La Fédération des Caisses Populaires Desjardins acts as a promotional institution and inspects the caisses populaires. In some other provinces Co-operative Credit Societies have been formed to provide certain financial services to both credit unions and co-operatives. For statistical purposes the credit departments of credit union leagues, the regional caisses populaires and the Co-operative Credit Societies have been classed as central credit unions.

In 1957 there were 27 central credit unions handling funds incorporated under provincial legislation for all provinces.

The Canadian Co-operative Credit Society was organized in 1953 for the purpose of serving provincial centrals and co-operatives across Canada. Operations of the C.C.C.S. do not differ greatly from that of a credit union with a board of directors and the various committees.

The 27 centrals reported a total membership of 4,608 consisting of 3,915 credit unions and 693 co-operatives. The largest membership was reported by the affiliated regionals and central of the Fédération des Caisses Populaires Desjardins with 1,216 credit unions, followed by the Ontario league with 800, Saskatchewan Society with 618 credit unions and co-operatives, the Ontario Co-operative Credit Society with 483 credit unions and co-operatives and the British Columbia league with 308 credit union members. Total assets reported by the 27 centrals in 1957 amounted to $103 million and loans and mortgages outstanding of over $22 million. Shares and deposists of all centrals in 1957 amounted to $93 million.

Total loans granted by all centrals since inception rose to $250 million by the end of 1957. Loans granted during 1957 amounted to $47 million.

By contrast, the 20 centrals in 1949 had assets of $33 million and loans outstanding of $11 million. These centrals served 2,200 credit unions as members as well as members from other associations.

THE FAO AND INTERNATIONAL COMMODITY PROBLEMS[1]

When the original planning conference, that led to the establishment of the Food and Agriculture Organization, met at Hot Springs in 1943, the major emphasis was on increased production and improved consumption, but the underlying concern was with the problems of commodity marketing. The experience of the "thirties" was sufficiently fresh to influence the thinking of the founding "fathers". As a result, from the very beginning, the FAO Conference, its agencies and its Secretariat devoted considerable time and energy to the alternating problems of surpluses and shortages.

---

[1] Prepared by Frank Shefrin.

The functions of the Food and Agriculture Organization, as defined in its Constitution, include the promotion and the recommendation of national and international action concerning "the improvement of . . . marketing, and distribution of food and agricultural products" and "the adoption of international policies with respect to agricultural commodity arrangements". To carry out its tasks, FAO collects information and sponsors research; provides member countries with technical assistance and advice; and promotes inter-governmental consultation on matters of common interest.

The FAO works through a Conference, a Council and a Secretariat. The Conference, which normally meets every other year, is the policy-making body. Between sessions, the Council supervises the work of the Organization. It is composed of 24 member governments elected by the Conference for a term of three years. Canada is a member of the Council. The Constitution defines the commodity work of the Council as follows.

The Council shall:

(a) keep under review the state of food and agriculture in the world, and consider the programs of Member Nations and Associate Members;

(b) tender advice on such matters to governments of Member Nations and Associate Members, inter-governmental commodity councils or other commodity authorities and to other specialized international agencies; . . .

(e) (i) examine current developments in proposed and existing inter-governmental agricultural commodity arrangements, particularly those developments affecting adequacy of food supply, utilization of food reserves and famine relief, changes in production or pricing policies and special food programs for undernourished groups;

(ii) promote consistency and integration of agricultural commodity policies, national and international, with regard to (a) over-all objectives of the Organization; (b) the interrelationships of production, distribution and consumption; and (c) interrelationships of agricultural commodities;

(iii) initiate and authorize groups to study and investigate agricultural commodity situations which are becoming critical and propose appropriate action, if necessary . . . ;

(iv) advise on emergency measures such as those relating to the export and import of food and materials or equipment needed for agricultural production, in order to facilitate implementation of national programs and, if necessary, request the Director-General to submit such advice for action to the Member Nations and Associate Members concerned.

The balance of this article describes the various committees of FAO concerned with commodity problems. It outlines briefly the origin and terms of reference of these committees and lists some of their activities. A more detailed report on the work of these commodity groups will be given at a later date.

The Committee on Commodity Problems—(CCP)

Inter-governmental consideration of commodity problems of an international character is focussed in the FAO Committee on Commodity Problems, and its five standing subgroups. The following summarizes briefly the origin and terms of references of the CCP.

Origin	Established by the Fifth Session of the FAO Conference (December 1949) to work under the supervision of and be responsible to the Council. In November 1957, by decision of the Ninth Session of the Conference, it became a Standing Committee of the Council.

First Session January 1950.

Membership Originally 14 Member Governments appointed annually by the Council, raised to 20 by the Seventh Session of the Conference and to 24 by the Eight Session of the Conference. From November 1957, by decision of Ninth Session of the FAO Conference, members appointed biennially. The current membership is made up of Argentina, Australia, Belgium, Brazil, Burma, Canada, Ceylon, Colombia, Cuba, Denmark, France, Federal Republic of Germany, India, Indonesia, Japan, Netherlands, New Zealand, Pakistan, Union of South Africa, Spain, United Arab Republic (Egypt), United Kingdom, United States, Yugoslavia.

Purpose The Committee's terms of reference were laid down by the Fifth Session of the Conference, widened by the Special Session of the Conference in 1950 and again by the Ninth Session of the FAO Conference (1957). The CCP considers commodity problems of an international character affecting production, trade, distribution and consumption, and related economic matters. The CCP is responsible for keeping the above matters under continuous review in order to be able:

> to prepare a factual and interpretative survey of the world commodity situation, which would be made available directly to Member Nations;
>
> to report and submit suggestions to the Council on policy issues arising out of its deliberations, it being understood that these reports and those of its subordinate bodies would be made available to Member Governments for their information.

The CCP may, when necessary, establish subcommittees, subsidiary working parties or commodity study groups and may include in the membership of such subcommittees or subsidiary working parties Member Nations that are not members of the Committee and Associate Members. The membership of commodity study groups established by the Committee may include nations which, while not Member Nations or Associate Members of the Organization, are members of the United Nations.

The Committee thus operates as the instrument for carrying out FAO's responsibilities of analysis and interpretation of the international commodity situation and advising on suitable action whenever appropriate, and deals with commodity problems falling within the competence of FAO. It makes periodic reports on the world situation and outlook for different commodities, and makes special studies of critical supply and price situations. In recent years it has been giving particular attention to the utilization of surpluses.

Consultative Sub-Committee on Surplus Disposal.—This Sub-Committee located in Washington, D.C., United States, deals with surplus disposal transactions and programs in the light of the FAO principles of surplus disposal. The following outlines briefly the origin, membership and functions of the Sub-Committee:

Origin Established by the Twenty-Third Session of the CCP (June 1954) to meet in Washington, D.C., U.S.A. and report periodically to the CCP. The Sub-Committee holds regular monthly meetings.

First Session	27 July 1954.
Membership	Membership is open to all Member Nations of the FAO and in January 1959 consisted of the following 28 countries: Argentina, Australia, Austria, Canada, Ceylon, Costa Rica, Cuba, Denmark, France, Greece, India, Indonesia, Iraq, Israel, Italy, Jordan, The Netherlands, New Zealand, Pakistan, Philippines, Spain, Sweden, Turkey, Union of South Africa, United Arab Republic, United Kingdom, United States, Uruguay.
Purpose	The Sub-Committee's terms of reference were laid down by the Twenty-Third Session of the CCP. They required it to keep under review developments in the disposal of agricultural surpluses; to assist FAO Member Nations in developing suitable means of surplus disposal; and to provide a forum for discussion of surplus disposal programs, policies, and transactions of Member Nations with a view to promoting the observance of the principles of surplus disposal recommended by FAO.

In the fall of 1954 the Council of FAO endorsed the principles of surplus disposal drawn up by the CCP. Briefly, the three principles which have been accepted by 36 Member Nations including the U.S.A. and Canada, stated that:

1. The solution to problems of agricultural surplus disposal should be sought, wherever possible, through efforts to increase consumption rather than through measures to restrict supplies.
2. Member Governments, which have excess stocks of agricultural products should dispose of such products in an orderly manner so as to avoid any undue pressure resulting in sharp falls of prices on world markets, particularly when prices of agricultural products are generally low.
3. Where surpluses are disposed of under special terms, there should be an undertaking from both importing and exporting countries that such arrangements will be made without harmful interference with normal patterns of production and international trade.

These principles are elaborated on in relation to (i) sales on concessional terms, (ii) assurances against resale or trans-shipment, (iii) sales of government-held stocks in exceptional volume or at an exceptionally rapid rate.

The Sub-Committee's activities have included a special working party of the Sub-Committee to report on ways of using surpluses for national reserves in conformity with the FAO Principles. The Sub-Committee has also appraised the results of questionnaires on surplus disposals of wheat and dairy products sent to all governments by the CCP. The possibilities of a pilot research study to examine national experience in the use of food surpluses have been examined. Under the auspices of the Sub-Committee's group on dried skim milk, the Calcutta milk scheme has received special aid from dairy exporting countries. In September 1957 a second team of experts (including a Canadian) from exporting countries visited Pakistan to prepare specific proposals to encourage milk production and consumption, and these are now under consideration by the Washington Group.

The Sub-Committee itself does not pass judgment but rather acts as a forum for airing complaints and giving explanations. Thus the United States has provided detailed statements on various phases of her disposal program, and on specific transactions. Canada has also used the Sub-Committee to air complaints or to report on her own proposed activities.

Commodity Study Groups.—A feature of the CCP's activities over the past few years has been the more intensive application of the policy of setting up commodity study groups. The Committee believes that such groups provide useful opportunity for intergovernmental consultation, bring about a better exchange of knowledge and experience, both technical and economic, and also afford governments opportunity to review their policies in regard to those commodities in the light of these studies. The commodities currently subject to review by study groups or working parties include rice, grains, cocoa, and coconut and coconut products.

Consultative Sub-Committee on Economic Aspects of Rice.—This Sub-Committee was established by the CCP in October 1955 and its membership is open to all FAO Member Nations and to interested United Nations Member States, who wish to participate. The Sub-Committee first met in October 1956. It reports periodically to the CCP. The terms of reference as laid down by the CCP are

> "to provide a forum for consultations on the economic aspects of rice, paying particular attention to trade matters and to any special difficulties which exist or are likely to arise in the international trade in rice."

The main object of its work is to enable countries interested in the production, consumption and trade in rice to appraise the market situation, to plan their national policies and to explore jointly the approaches to a reduction of instability in the commodity. One example of work initiated by this Sub-Committee is a reciprocal exchange of up-to-date information at frequent intervals. Associated with the Sub-Committee is a group of experts on rice grading and standardization. Canada has participated as an observer in this Sub-Committee.

FAO Group on Grains.—Apart from the organization established under the series of International Wheat Agreements the principal organization having to do with grains is the FAO.

The FAO Conference, at its Eighth Session in 1955, requested the Committee to "consider the desirability of establishing a special group to review the international grain situation, including coarse grains". This action reflected a feeling on the part of the major exporters of grains that the increase in stocks, the intensity of the United States surplus disposal activities and the trend on the part of some importing countries towards greater self-sufficiency in grains threatened complete demoralization of the world trade in grains. The CCP at its Twenty-Seventh Session called together an ad hoc intergovernmental meeting to consider the problems affecting grains and the desirability of establishing such a group. The meeting recommended the establishing of an FAO Group on Grains. Canada was represented at the original meeting and is a member of the Group on Grains.

The program of work of the FAO Grain Group was set out at its first meeting in June 1957 and included the following:

(1) The regular appraisal of the world grain situation and short term outlook.

(2) The examination of trends in production, consumption, stocks, prices and trade.

(3) The consideration and analysis of national grain policies and other international effects as pertaining to the current and prospective grain situation.

(4) The improvement of grain statistics.

This Group has been very active over the past two years.

FAO Cocoa Study Group.—On May 4, 1956 the United Nations called together an Exploratory Meeting on International Trade in Cocoa, which recommended that FAO consider the early establishment of an intergovernmental cocoa study group. The Committee, after examining the problem, decided to set up an FAO Cocoa Study Group, open to all interested governments, to study the production and consumption of and trade in, cocoa, having regard particularly to the desirability of providing continuous and accurate information regarding the supply and demand position and its probable development. The Group was also empowered to consider technical measures which could promote a steady expansion in production and consumption. Canada has been represented by an observer at several meetings of this Group.

FAO Group on Coconut and Coconut Products.—This group was established by the Twenty-Eighth Session of the Committee on Commodity Problems (March 1957) and reports periodically to the CCP.

It is open to all FAO Member Nations that wish to participate, and, on invitation of CCP, to interested U.N. Member States.

Terms of reference laid down by the Twenty-Eighth Session of the CCP are:

> To provide a forum for consultations on the economic aspects of production, consumption, trade and marketing of coconut and coconut products; to study these matters, having regard especially to the promotion and provision of regular and accurate information on the supply and demand position and its probable development.
>
> Within its field of competence to consider the causes and effects of fluctuations in the prices and volume of international trade in coconut products, and to study ways of reducing the disadvantages due to such fluctuations.
>
> To consider as it deems appropriate, the conditions for and measures designed to promote expansion of consumption and production of coconut and coconut products, including relevant technical matters bearing on the supply and demand situation.

Agricultural Support Measures.—The Conference, at its Eight Session, in 1955, requested the Director-General to convene a working party of experts "to analyze the various systems of price support and other methods of maintaining farm incomes, including measures to reduce costs and raise productivity, which have been employed or proposed, with particular reference to their effects on the flexibility of production, on domestic consumption levels, on the level of international trade and on the maintenance of a level of farm incomes in reasonable relation to incomes in other occupations, and to submit their findings to the Committee on Commodity Problems".

The Working Party met in December 1956 and was attended by experts from 13 countries, and an observer from the OEEC. Canada sent a representative, who was elected Chairman of the group. Its Report gave a factual analysis of the main agricultural support measures in current and recent use, covering agricultural price guarantees, measures to support agricultural prices which do not involve price guarantees and measures tending to raise farm incomes other than by the regulation of prices, and appraised these various support measures from the point of view of the producer and the consumer, in relation to the problem of surpluses and in relation to international trade.

The conclusions are directed towards supports which will mean as little interference as possible to the best development of world agriculture from an economic standpoint. It is recognized that there are modifying sociological, political and other factors, which may have to be taken into consideration in individual countries, but the economic basis should set the direction pattern.

The Ninth Session of the FAO Conference meeting in November 1957 reviewed the report and after considerable discussion called for further action. A resolution was adopted which requested the Director-General to set up a panel of government representatives,[1] who should be specialists in agricultural support matters, to prepare a report for consideration by the Committee on Commodity Problems, the Council and member governments.

The panel is directed by the Conference resolution:

1. to analyse the effects of the various agricultural support systems, including different levels of price support, with a view to obtaining a better basis for evaluating the relative advantages and disadvantages of such systems; the study should cover the effects of the various support measures on increasing agricultural production and investment, especially in less-developed countries and regions, and the integration of price supports with other steps taken to increase production and agricultural incomes;
2. to recommend guiding principles designed to minimize the adverse effects of agricultural support policies on international trade, and to be taken into account by member governments in establishing or reviewing their agricultural policies; in developing such principles the panel shall have full regard to the special circumstances and problems of countries.

Summary

The contribution of the FAO in the commodity field is mainly through the Committee on Commodity Problems and its subsidiary bodies. The FAO through its review and analysis of current commodity problems has contributed to action programs.

The work of the FAO Conference, the Council and the CCP in the commodity field may be summarized as follows:

1. Making a periodic review of the commodity situation;
2. Providing a forum for discussing problems, exchanging views, and studying national policies;
3. Sponsoring specialized commodity study groups;
4. Reviewing proposals for action and making recommendations;
5. Publishing reports on commodity policies and developments;
6. Co-operating with other international commodity agencies in the preparation and review of commodity situation reports and in considering proposals for action programs.

A partial list of publications shown below indicate the scope of activities:
The State of Food and Agriculture (an annual review);
Monthly Bulletin of Agricultural Economics and Statistics;
Specialized Commodity Bulletins;

The Commodity Policy Studies include:
  A Reconsideration of the Economics of the International Wheat Agreement;
  Survey of National Measures for Controlling Farm Prices in Western European Countries;
  Observations on the Proposed International Sugar Agreement;
  Disposal of Agricultural Surpluses;
  Uses of Agricultural Surpluses to Finance Economic Development in Under-developed Countries—A Pilot Study in India;

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[1] The working party of which Canada was a member met in Rome in April 1959. The report of this group was not available at the time *The Economic Annalist* went to press.

- The Stabilization of the International Trade in Rice: A Report on Possible Measures;
- The International Effects of National Grain Policies;
- The Stabilization of the Olive Oil Market;
- Functions of a World Food Reserve—Scope and Limitations;
- National Food Reserve Policies in Underdeveloped Countries.

The continuous reviewing and reporting on commodity developments and statistics have not only been useful to the underdeveloped countries that lack or have inadequate facilities for this purpose but also to the economically developed countries.

Canada has been actively associated with the commodity work of the FAO. She is a member of the Council, the CCP, the Washington Sub-Committee on Surplus Disposal, and of a number of commodity study groups.

CAPITAL INVESTMENT ON GRAIN AND LIVESTOCK FARMS IN MANITOBA, 1957

C. Varkaris

The purpose of this article is to show the capital invested on grain and livestock farms in Manitoba in terms of the size of total investment and the main components. Previous articles have outlined capital investment in agriculture on a broad national basis[1] and for certain areas of the Prairie region.[2]

Data on capital investment are available from studies carried out by the Economics Division, Canada Department of Agriculture in Manitoba in 1957.[3] Two typical sizes of grain farms and three typical sizes of farms specializing in beef production are discussed here with respect to capital investment in real estate, machinery and equipment, livestock, feeds and supplies.

Table 1.—Capital Investment, 51 Grain Farms, Red River Valley, Manitoba, 1957

	30—Small farms			21—Medium farms		
	Average value	Per cent	Value per tillable acre	Average value	Per cent	Value per tillable acre
	$		$	$		$
Real estate	34,337	79.6	106	44,626	81.2	96
Machinery and equipment	6,322	14.7	20	8,263	15.0	18
Livestock	1,296	3.0	4	856	1.6	2
Feeds and supplies	1,158	2.7	3	1,185	2.2	3
Total	**43,113**	**100.0**	**133**	**54,930**	**100.0**	**119**

Grain Farms.—The grain farms included in the study are located in the Red River Valley area south of Winnipeg. The size of these farms were one half and three quarter section, and will be referred to as small and medium farms,

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[1] Kristjanson, B. H., *The Capital Structure of Canadian Agriculture, The Economic Annalist*, June 1957.

[2] Kristjanson, B. H., *The Capital Structure of Canadian Agriculture* (Part II), *The Economic Annalist*, October 1957.

[3] Johnson, L. M., *Changes in Farm Organization in Manitoba* unpublished report, 1957, Economics Division, Canada Department of Agriculture, Winnipeg, Manitoba.

Table 2.—Distribution of Investment in Real Estate, 51 Grain Farms, Red River Valley, Manitoba, 1957

——	30—Small farms		21—Medium farms	
	Average value	Per cent	Average value	Per cent
	$		$	
Dwellings	7,567	22.0	7,190	16.1
Barns	2,655	7.7	2,571	5.8
Granaries	2,012	5.9	2,262	5.0
Garages	350	1.0	207	0.5
Implement sheds	277	0.8	352	0.8
Other buildings	883	2.6	477	1.1
Total buildings[a]	13,744	40.0	13,059	29.3
Land	20,593	60.0	31,567	70.7
Total	**34,337**	**100.0**	**44,626**	**100.0**

[a] These values are farmer's estimates of the cost of replacement at 1957 prices. An "additive value" of buildings was also obtained. This is the difference between the farmer's estimate of total real estate which represents a market value of the farm as a going unit and bare land value. The average value obtained by the additive value was 31.6 per cent of the replacement value on small farms and 28.9 per cent on medium farms.

Table 3.—Distribution of Investment in Machinery and Equipment, 51 Grain Farms, Red River Valley, Manitoba, 1957

——	30—Small farms		21—Medium farms	
	Average value	Per cent	Average value	Per cent
	$		$	
Power and transportation	2,729	43.2	3,279	39.6
Tillage and seeding	1,051	16.6	1,526	18.5
Haying and harvesting	2,002	31.7	2,801	33.9
Livestock equipment	100	1.6	64	0.8
Miscellaneous	440	6.9	593	7.2
Total	**6,322**	**100.0**	**8,263**	**100.0**

Table 4.—Capital Investment, 58 Livestock Farms, Interlake Area, Manitoba, 1957

——	15–34 Head of cattle			35–49 Head of cattle			50 Head of cattle and over		
	Average value	Per cent	Value per head of cattle	Average value	Per cent	Value per head of cattle	Average value	Per cent	Value per head of cattle
	$			$			$		
Real estate	9,163	64.8	385	7,480	58.3	174	10,798	53.2	150
Machinery and equipment	2,541	17.1	102	1,814	14.1	42	2,829	14.0	39
Livestock	2,675	18.1	107	3,539	27.6	82	6,656	32.8	93
Total	**14,379**	**100.0**	**594**	**12,833**	**100.0**	**298**	**20,283**	**100.0**	**282**
No. of farms		22			21			15	

Table 5.—Distribution of Real Estate, 58 Livestock Farms, Interlake Area, Manitoba, 1957

—	15–34 Head of cattle		35–49 Head of cattle		50 Head of Cattle and over	
	Average value	Per cent	Average value	Per cent	Average value	Per cent
	$		$		$	
Houses	3,637	37.8	2,967	39.7	4,580	42.4
Barns	2,218	23.1	1,582	21.2	2,377	22.0
Granaries	761	7.9	376	5.0	483	4.5
Garages	139	1.5	101	1.4	163	1.5
Implement sheds	23	0.2	71	0.9	103	0.9
Other buildings	436	4.5	210	2.8	180	1.7
Total buildings[a]	7,214	75.0	5,307	71.0	7,886	73.0
Land	2,399	25.0	2,173	29.0	2,912	27.0
Total real estate	**9,613**	**100.0**	**7,480**	**100.0**	**10,798**	**100.0**

[a] These values are farmer's estimates of the cost of replacement at 1957 prices. An "additive value" of buildings was also obtained. This is the difference between the farmer's estimate of total real estate which represents a market value of the farm as a going unit and bare land value. The average value obtained by the additive value was 43.0 per cent of the replacement value on small farms and 33.4 per cent on medium farms and 49.6 per cent on large farms.

respectively. The average investment in the small farms (up to 401 acres) was $43,113 as compared with $54,930 in the medium size farms (between 401 and 561 acres). This amounted to $133 and $119 per improved acre for the small and medium size farms, respectively. In the case of both groups of farms the proportion of investment in various categories was somewhat similar. The medium size farms had a higher per cent in real estate and machinery and equipment but lower per cent in livestock and supplies (Table 1). A further breakdown of real estate investment revealed no significant difference in the investment in buildings between the two groups. The small size farms averaged $13,744 as compared with $13,059 in the medium size farms (Table 2). Table 3 also shows the distribution of investment in machinery and equipment classified according to their use. Although the absolute amount invested in machinery was much larger in medium farms the difference in the value per improved acre among the two sizes was small.

Table 6.—Distribution of Investment in Machinery and Equipment, 58 Livestock Farms, Interlake Area, Manitoba, 1957

—	15–34 Head of cattle		35–49 Head of cattle		50 Head of Cattle and over	
	Average value	Per cent	Average value	Per cent	Average value	Per cent
	$		$		$	
Power and transportation	955	37.6	770	42.5	1,189	42.0
Tillage and seeding	388	15.3	196	10.8	337	11.9
Haying and harvesting	732	28.8	358	19.7	547	19.4
Livestock	135	5.3	154	8.5	235	8.3
Miscellaneous	331	13.0	336	18.5	521	18.4
Total	**2,541**	**100.0**	**1,814**	**100.0**	**2,829**	**100.0**

Livestock Farms.—The sample of livestock farms in this study are located in the Interlake Area, between Lake Manitoba and Lake Winnipeg. The classification of these farms was according to the number of cattle kept. The first group was composed of those farms keeping between 14-34 head of cattle and averaged 25, the second group kept 35-49 head and averaged 43, and the third group kept over 50 head of cattle and averaged 72. Farms with purebred herds kept mainly for the purpose of selling breeding stock or farms having contracts to ship fluid milk to Winnipeg were excluded.

Total capital investment of the first group averaged $14,829, the second $12,833 and the third group $20,283. This amounts to $594, $298, $282, per head of cattle for the first, second and third group respectively. The per cent distribution of the three main kinds of investment shows a definite pattern. The per cent of real estate and machinery and equipment decreased as the size of herd increased. On the other hand, the per cent of livestock investment increased (Table 4).

Table 5 indicates the distribution of investment in real estate according to kind and Table 6 gives a similar breakdown of investment in machinery and equipment according to their use.

The higher investment per farm in group one as compared with that in group two is due to the difference in the amount of land under cultivation. Group one has an average of 86 acres of crop land (mainly wheat, oats and barley) as compared with 45 acres in the second group. This in turn explains the higher investment in machinery in group one.

SOME FEATURES OF THE CATTLE ENTERPRISE IN THE LUNDAR-ERIKSDALE AREA OF MANITOBA[1]

J. G. MacKenzie

Farms in the Lundar-Eriksdale area of Manitoba generally use land of low productivity for the production of cereal grains and livestock. Sales of cattle and dairy products are the main source of income. Returns from these sources, however, vary widely from farm to farm. One of the major problems of farm organization is the selection of methods and practices which will result in higher returns from grassland and the cattle enterprise.

In 1957, the Economics Division carried out a study of farm organization in this area. Information was obtained on 58 randomly selected farms. This article will deal with some aspects of the organization of these farms: the management of the cattle enterprise; income and expenditure patterns; and relationships between returns and size of herd.

Management Practices.—Many well-bred herds of cattle are found in this area. On farms where few cattle are kept farmers rely heavily on sales of cream as a source of income. Cows are often of mixed dairy and beef breeding[2] but beef cattle are more commonly found in large herds. Of the farms visited, 49 reported the use of purebred bulls and 15 the use of grade bulls.[3] In general, the grade bulls showed good conformation and breeding. Hereford was the most common breed of cattle; Hereford bulls accounted for about 59 per cent of the purebred bulls, Shorthorn 20 per cent, Holstein 16 per cent, and Aberdeen Angus five per cent. Beef breeds accounted for 60 per cent of the grade bulls.

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[1] This article presents some of the results of a study conducted by the Economics Division in 1957. For a full description of land use, capital investment, and returns to farm capital and labor, see: *Farm Organization and Business in the Lundar-Eriksdale Area of Manitoba, The Economic Annalist,* Vol. XXVIII, No. 3, 1958, pp. 53-58.

[2] Farms which shipped whole milk to Winnipeg were not included in the sample.

[3] Both purebred and grade bulls were used on some farms.

Native grasses supplied most of the pasture and winter hay for livestock. Although 36 per cent of the farms visited had land seeded to legumes or improved grasses, the average acreage per farm was fairly small. On the average, there was one acre in clover, one in alfalfa, two in tame hay and six in improved pasture and as much as 671 acres per farm in unimproved land available for pasture or hay. The grazing period generally extends from May 15 to October 15. The farm operators interviewed estimated that a mature animal would require about six acres of meadow pasture during the entire grazing period.

Although a few large attractive barns may be seen in the area, many farms have old barns for which the cost of construction and repairs had been held to a minimum. The common practice was to house all milk cows, cows with calves, and calves in the conventional type of barn and possibly run some dry cows or heifers and steers in an open shed, corral, or around a straw pile. Seventeen farms used sheds and seven used straw piles or corrals. One farm only was without any barn; it housed all its cattle in a shed. Hydroelectric facilities were available throughout the rural area and milking machines were used in 20 per cent of the barns.

Wild native hay represented about 98 per cent of all winter fodder fed to cattle. The remainder was made up of tame hay and miscellaneous green feeds. Estimates supplied by farm operators indicated that about 3.5 tons of hay were fed per head of mature cow or bull during the winter months, 2.5 tons per heifer or steer, and 1.5 tons per calf. On many farms this hay is of rather low quality. In addition to hay and green feed, four tons of straw were used per farm. Although seven of the 58 farms purchased some hay or straw for cattle, only two per cent of the total roughage fed to cattle was purchased.

Grain was fed to cattle during part of the year on 56 of the 58 farms visited; a large part of this grain was purchased. Thirty-two farms reported the use of home-grown grain and 43 the purchase of grain. The common winter feeding practice was to allow milk cows about 6.5 pounds of grain per day while milking, and beef cows 4.5 pounds per day from about one month before calving until they went out on grass. Heifers and steers were fed grain on about one-third of the farms and calves were fed grain on about one-half of the farms. The common rate of feeding grain was 2.5 pounds per day for heifers and steers and 1.5 pounds per day for calves. Where grain was fed to cattle there was no apparent relationship between size of cattle herd and quantity of grain fed per animal per day. On about four-fifths of the farms a mineral supplement was added to the grain.

Although fair to well bred cattle predominated, animals were frequently marketed in an unfinished condition partly because of the inadequate supply of home-grown grains, legumes, and tame hays. Several farmers reported selling "good" grade animals but, in all likelihood, few "choice" animals were sold. On farms with small cattle herds more cows were milked and hence many calves were sold as veal; on farms with larger herds cattle were usually sold off grass as long two-year-olds. The average weight at time of sale was 240 pounds for calves, 780 pounds for heifers, and 850 pounds for steers. A few farmers delivered their own cattle to the St. Boniface stockyards but, in general, shipments were handled by local truckers.

Labor Requirements.—The time required to look after the cattle enterprise averaged 75.5 hours per animal unit (Table 1). This input decreased from 92.1 hours per animal unit on farms with less than 35 head of cattle per farm to 59.1 hours on farms with 50 or more head. These estimates represent all work done by the farm labor force which pertains to the management and care of

Table 1.—Distribution of Labor on the Cattle Enterprise by Season and Hours of Labor Per Animal Unit According to Size of Herd, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1956-57

Season	Head of cattle			All farms
	15–34	35–49	50 or more	
Number of farms	22	21	15	58
	—average per cent of hours per farm—			
Spring (April-May)	18	19	19	9
Summer (June-July)	13	11	9	11
Fall (Aug.-Oct.)	22	20	19	20
Winter (Nov.-March)	47	50	53	50
Total	**100**	**100**	**100**	**100**
	—average total hours per farm—			
Total hours	1,638	2,402	2,904	2,242
Hours per animal unit	92.1	84.8	59.1	75.5

cattle, including feeding, milking and barn cleaning and such chores as medical care, dehorning, herding, and fencing.

On the average, 19 per cent of the annual labor requirements for cattle occurred during the spring season, 11 per cent in the summer, 20 per cent in the fall, and 50 per cent in the winter. The same general seasonal pattern prevailed for all sizes of cattle enterprises although farms with smaller herds utilized a slightly larger portion of the total during the summer and fall. On these farms dairying was relatively more important and cows were often milked only in the summer and fall.

Sales and Inventory Change.—On the average the income from cattle sales amounted to $956 per farm, and ranged from an average of $639 per farm on farms with less than 35 head of cattle to $1,553 on farms with 50 or more head (Table 2). On a few farms animals were butchered to supply the home with beef.

Table 2.—Sales of Cattle and Value of Home-Used Beef According to Size of Herd, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1956-57

Class of animal	Head of cattle			All farms
	15–34	35–49	50 or more	
	—average per cent of sales—			
SALES:				
Cows	43	18	10	21
Bulls	9	4	2	4
Heifers and steers	23	57	70	54
Calves	25	21	18	21
Total	**100**	**100**	**100**	**100**
	—average dollars per farm—			
Total sales	639	861	1,553	956
Used on farm	26	20	50	30
Total	**665**	**881**	**1,603**	**986**

Table 3.—Sale of Cream and Value of Home-Used Dairy Products According to Size of Herd, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1956-57

	Head of cattle			All farms
	15–34	35–49	50 or more	
	—average dollars per farm—			
Sales	666	895	904	810
Home-used	141	133	170	146
Total	**807**	**1,028**	**1,074**	**956**

Of the total receipts from sales of cattle heifers and steers accounted for 54 per cent, cows and calves for 21 per cent each and bulls four per cent. On the farms with smaller herds it was a common practice to replace the milk cows regularly with home-raised heifers. In this way a large part of the cattle receipts came from the sale of cows. On farms with larger herds most of the cattle receipts were from the sale of heifers and steers.

Receipts from dairy products averaged $810 per farm and ranged from an average of $666 for the small herd group of farms to $904 for the large herd group (Table 3).

Dairy products used in the home were estimated at $146 and brought the total returns from dairy products to an average of $956 per farm.

In 1956-57 the farms included in the study increased the inventory of their cattle enterprise. This increase averaged $332 per farm and varied directly with the size of the herd (Table 4).

Expenditure Pattern.—Figures on expenses incurred in the production of cattle and dairy products are presented in Table 5. Total expenses averaged $1,832 per farm and ranged from $1,230 on farms with less than 35 head to $2,886 on farms with more than 49 head.

Real estate expenses averaged $159 per farm. These expenses included taxes and lease or rental charge on pasture land, repairs to buildings utilized by cattle, cost of fencing materials, depreciation, and interest on that share of the real estate investment which pertains to the cattle enterprise.

Machinery expenses averaged $205 per farm; they included tractor costs for work done on cattle chores such as hauling feed and barn cleaning, repairs

Table 4.—Change in Inventory by Class of Cattle According to Size of Herd, 58 Farms, Lundar-Eriksdale Area of Manitoba, 1956-57

Class of cattle	Head of cattle			All farms
	15–34	35–49	50 or more	
	—average dollars per farm—			
Cows	47	26	210	82
Bulls	−21	18	13	2
Heifers and steers	154	165	233	177
Calves	11	89	133	71
Total	**191**	**298**	**589**	**332**

for other machinery and equipment used on the cattle enterprise, and depreciation and interest on investment for this machinery and equipment.

Feed expenses the largest single item of expenditure for the cattle enterprise, averaged $1,172 per farm. These expenses included an estimated value for all home-grown feed[1] as well as the costs of all purchased feed fed to cattle.

Miscellaneous expenses, including such items as livestock purchases, interest on capital investment in cattle, veterinary fees and medicines, electricity and telephone, averaged $296 per farm.

Returns to Labor from the Cattle Enterprise.—Gross returns from the cattle enterprise, including sales of beef and dairy products, value of beef and dairy products consumed in the home, and value of inventory increase, averaged $2,152 per farm and ranged from $1,541 on farms with less than 35 head of cattle to $3,294 on farms with 50 or more head (Table 6).

Net returns to labor averaged $320 per farm and were also higher on farms in the large herd group than on other farms. These returns show what is left of gross returns after all expenses except labor expenses have been deducted from these gross returns. When considered in relation to the number of hours of labor these returns were higher on the small than on the large herd farms. On the other hand, when viewed as returns per man-equivalent they were higher on the large herd farms (Table 6).

Table 5.—Expenditure Pattern on the Cattle Enterprise According to Size of Herd, 38 Farms[a], Lundar-Eriksdale Area of Manitoba, 1956-57

Expense item	Head of cattle			All farms
	15–34	35–49	50 or more	
Number of farms	14	16	8	38
	—average dollars per farm—			
Real estate	135	174	171	159
Machinery	154	181	341	205
Feed[b]	738	1,205	1,869	1,172
Miscellaneous[c]	203	271	505	296
Total	**1,230**	**1,831**	**2,886**	**1,832**

[a] Information on feed costs for cattle enterprise available on 38 farm records. Therefore, expenditure pattern presented only for these farms. NOTE: Tables 1, 2, 3, and 4 present complete information for all farms (58) included in this study.

[b] Includes value of home-grown feeds used.

[c] Includes such items as veterinary, share of electricity and telephone to the cattle enterprise, and interest on capital investment on cattle.

In general, as size of herd increased farmers placed less emphasis on sales of dairy products and increased their sales of beef. Labor used to produce dairy products yielded higher returns per hour than labor used in beef production. On the large beef-producing farms, however, net returns per farm were greater and there was no corresponding increase in total man-equivalents.

---

[1] All home-grown feeds valued at market prices: wild hay at $6.00 per ton; brome hay and sweet clover, $9.50 per ton; and alfalfa, $15.00 per ton.

Table 6.—Returns to Labor from the Cattle Enterprise According to Size of Herd, 38 Farms[a], Lundar-Eriksdale Area of Manitoba, 1957

	Head of cattle			All farms
	15-34	35-49	50 or more	
	—average dollars per farm—			
Gross returns[b]	1,541	2,117	3,294	2,152
Total expenses	1,230	1,831	2,886	1,832
Net returns to labor	**311**	**286**	**408**	**320**
	—average dollars per unit of labor—			
Net returns per hour of labor used on the cattle enterprise	0.19	0.12	0.13	0.14
Net returns per man-equivalent	223.74	191.95	251.85	261.22

[a] Information on expenditure pattern for cattle enterprise complete on 38 farm records. Therefore, returns to labor presented only for these farms.

[b] Gross returns include value of animals butchered and used in home, and value of dairy products used in home.

Average net returns to labor were slightly lower on the medium-size (35-49 head of cattle) than on the small farms. On these medium-size farms building and feed cost tended to increase with an increase in size of herd without a corresponding increase in sales of beef and dairy products.

Summary.—Most of the farms in the Lundar-Eriksdale area kept some dairy cows. When these cows were milked the usual practice was to veal the calves and maximize income by selling cream. Where cows were not milked the calves were usually carried over and sold off grass as long two-year-olds. In either case production was usually carried out with a minimum of expense for buildings and a minimum use of grains or other concentrated feeds.

Returns to operators' and family labor for time spent on production of beef and dairy products were rather low. The soils are generally sub-marginal for grain growing but a large part of the area is in meadows, particularly that part which lies along Lake Manitoba. There is little or no alternative use for this land except for pasture or wild hay production.

The local price for wild hay was about $6.00 per ton. It is questionable whether there would be a commercial market for this type of hay if a large number of cattle were not maintained in the area. On farms with large cattle herds, especially, where 150 or more tons of wild hay are fed, the returns derived from this type of hay add considerably to the total net returns to farm labor.

PUBLICATIONS OF THE ECONOMICS DIVISION

Growth of the Co-operative Movement at St. Anselme. A Quebec Rural Parish—L'essor du mouvement coopératif de St. Anselme, Une paroisse rurale québécoise. Perreault, Roger. Ottawa, June 1958. pp. 14 (English) and 16 (French).

A document prepared, in English and French, for the Department of Agriculture and "meant for students coming to Canada under the auspices of the Colombo Plan who desire to obtain information on co-operatives in this country". It should help the students to gain an exact idea of the importance and of the scope of the co-operative movement in some of the farming communities of Quebec.

Canadian Imports of Fresh Fruits and Vegetables from the U.S.A.—Quantities, Values and Duties, Fiscal Years 1953-54 to 1957-58. Ottawa, September 1958, pp. 107.

A series of 26 statistical tables on "imports from the United States of fresh fruits and vegetables of a type grown in Canada".

OTHER PUBLICATIONS

Canada's Economic Development 1867-1953. Firestone, O. J. International Association for Research in Income and Wealth. Income and Wealth—Series VII. Bowes & Bowes, London, England. 1958. pp. XXVI + 384.

The author, an economic adviser with the Department of Trade and Commerce of the Government of Canada, analyses the economic development of Canada from the inauguration of Confederation in 1867 to 1953. He, at the same time, presents the reader with a comprehensive review of long-term trends in population, national product, consumer expenditures, investment and capital consumption, government expenditures, foreign trade, income and prices, industrial structure, productivity and capital requirements. His primary objective is to supply a story of Canada's economic development in terms of national product and national wealth.

His study was prepared at the request of the Programme Committee of the International Association for Research in Income and Wealth. It is organized in four parts: the first is a summary of the analysis and the second is the analysis itself of economic changes, in the aggregate and in terms of major economic flows and industries; the third explains the basis for and the derivation of the estimates contained in the study; and the concluding part presents a historical review of Canadian national income and national wealth estimates made by private investigators and government agencies, excluding official estimates.

Some Considerations Affecting the Marketing of Farm Pigs. Rickard, R. C. August 1958. pp. 20.

The two publications listed above are from the Department of Economics (Agricultural Economics), University of Bristol, 1, Courtenay Park, Newton Abbot, Devon, England.

Farm Organization and Incomes in South West England, 1956. Morris, S. T., H. W. B. Luxton and G. D. D. Davies. July 1958. pp. 61.

The Small Farm on Heavy Land. Reid, Ian G. June 1958. pp. 31.

The three publications listed above are from Wye College (near Ashford, Kent), University of London, England.

An Evaluation of British Land-Use Statistics. Best, R. H. June 1958, pp. 4.

The Recession in Farm Profits in South-East England. Sykes, J. D. June 1958, pp. 28.

Canadian Monetary Banking and Fiscal Development. McIvor, R. Craig. The MacMillan Company of Canada Limited. Toronto. 1958. pp. xix + 263.

A useful text for the student, layman and professional economist. The author has provided a historical review and economic evaluation going back to the monetary difficulties of New France and takes the reader through the various stages of Canada's economic development to the present time. For those who wish to pursue the subject in greater detail there is an excellent section on suggestions for further reading.

Introduction to Agricultural Economic Analyses. Bishop C. E. and W. O. Toussaint. John Wiley and Sons. New York. 1958. pp xiv + 258.

This book outlines some of the analytical tools used in agricultural economics and is intended mainly for the student of economics. However, a definite attempt has been made to tie together theory and policy. The book is divided into four sections. The first section emphasizes the *reasons for economic organization*, the *functions of an economic system* and the *nature of decision making* in the operation of an economy. The other sections cover *Production and Supply; Consumption and Demand;* and *Economic Progress*. It is of interest to note that all the illustrations are drawn from the farm business.

CORRIGENDA

On page 138 of the December 1958 issue of *The Economic Annalist* insert the following Table between the second and third paragraphs of T. O. Riecken's article, *Farm Organization in the Red River Valley, Manitoba,* 1957.

Table 7. Financial Summary for 31 Two and 21 Three Quarter-Section Farms, Red River Valley, Manitoba, 1957

——	Two quarter-sections	Three quarter-sections
—average dollars per farm—		
Cash receipts	5,116	7,274
Farm products used in home	177	96
Rental value of farm home	370	393
Total farm receipts	5,663	7,763
All expenses	3,916	5,151
Return to operator and family for labor and capital	1,747	2,612
RANGE IN RETURN		
Low	− 1,043	− 1,648
High	5,448	6,467

In the last line, last paragraph of the same article, substitute $3,947 for $4,947.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

J. F. BOOTH, Director

JUNE 1959 **Vol. XXIX No. 3**

CONTENTS

		Page
The Economic Situation		51
The Farm Family in Canada	*Helen C. Abell*	53
Farm Organization, Sifton-Fork River Area of Manitoba, 1949 and 1958	*L. M. Johnson*	59
A New International Wheat Agreement		65
Pasture Costs in Five Counties of Southwestern Ontario 1958	*H. W. Trevor*	70
United Nations Publications		72
Publications of the Economics Division		72

EDITORIAL COMMITTEE:

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Published by Authority of the Honourable Douglas S. Harkness
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
	1935-39=100							1949=100		1949=100
1913	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.5	247.6	208.8	118.1	113.4	154.9
1957	227.4	210.8	163.6	258.0	231.0	255.8	211.3	121.9	118.6	155.1
1958	....	....	....	....	....	....	....	125.1	122·1	151.7
1958										
July	227.0	219.4	159.4	279.3	241.6	....	....	124.7	121.4	151.4
August	226.8	215.9	156.5	275.2	238.5	263.9	213.7	125.2	122.6	150.2
Sept	227.1	211.1	155.2	266.9	236.1	....	....	125.6	122.9	150.5
Oct	226.9	211.8	154.4	269.3	236.4	....	....	126.0	123.4	151.4
Nov	228.5	212.1	155.2	269.1	236.5	....	....	126.3	123.2	154.7
Dec	229.1	217.6	156.5	278.7	239.3	....	....	126.2	122.2	155.1
1959										
Jan	229.7	217.7	156.6	278.7	242.0	258.8	218.1	126.1	122.3	157.8
Feb	230.8	214.8	155.6	274.0	239.7	....	....	125.7	121.2	160.9
Mar	230.8	212.4	155.4	269.5	237.3	....	....	125.5	120.0	159.7
April	231.2	213.7	156.4	271.0	236.7	....	....	125.4	119.3	....
May	....	....	....	....	....	....	....	....	....	....
June	....	....	....	....	....	....	....	....	....	....

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1956—July 1957 include final barley and wheat payments announced June 11, 1958.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

The Federal Budget.—The Minister of Finance presented his annual financial statement to the House of Commons on April 9. Prefacing that statement with a review of economic conditions in 1958, he said:

> "A year ago we were faced with the carry-over of the effects of a slowing down in economic activity. The two major factors in the recession which began early in 1957 were the decline in business capital investment and the liquidation of inventories, which resulted in serious unemployment. There is still considerable unemployment, but looking back over the past year it is clear that we are now in a period of economic recovery, a period in which the forces of economic growth and expansion have reasserted themselves".

The Minister, confident that the economic "recovery is still in process" said that "Assuming normal crops, stable prices and no untoward external event" he would base his budgetary policy and revenue forecasts "on a gross national product of about $34½ billion which is about seven per cent above the average level achieved in 1958".

He forecast budgetary expenditures, for the fiscal year ending March 31, 1960, of about $5,660 million, the old age security fund deficit excluded, or $5,845 million with that deficit included. These expenditures exceed budgetary expenditures for the previous year by $458 million.

Without changes in tax rates, he expected that total revenues of $5,165 million in 1959-60 or $395 million above those in 1958-59. With these projected revenues and expenditures, he expected a deficit of $680 million for the current fiscal year, if there were no change in the tax structure. Later in his speech, however, he announced increases in tax rates that would lead to total revenues of $5,267 million.

Wholesale Trade.—Canada's wholesalers made sales valued at $616.9 million in February, an increase of about ten per cent from the $560.1 million total in February 1958. January-February sales were also higher this year, totaling $1,209.9 million compared with $1,107.3 million last year.

Fourteen of the 17 specified trades reported larger sales in February 1959 than in February 1958. Gains ranged from 30.7 for farm machinery to 0.6 per cent for newsprint, paper and paper products.

Retail Sales.—Canada's retailers had sales valued at about $1,084.7 million in February 1959, a seven per cent increase from the $1,013.7 total in February 1958. The January-February total increased 6.6 per cent from $2,109.8 million last year to $2,249.8 million this year.

Employment.—The composite employment index (1949 = 100) dropped from 113.7 in January to 113.0 in February 1959 but was still at the same level as a year previously. Average weekly wages and salaries increased from $72.34 in January to $73,09 in February; the average for February 1958 was $70.02.

Canada's paid workers received about $1,360.1 million in February as wages and salaries and supplementary labor income, an increase from the $1,351.0 million total in January and the $1,277.1 million total in February 1958.

Labor income was larger in February this year than in February 1958 in all regions. The Prairie provinces recorded the highest gain, 10.5 per cent, and were followed by British Columbia with 8.1 per cent, Ontario 6.0, Quebec 5.3 and the Atlantic provinces with 4.1 per cent.

Industrial Production.—Canada's seasonally adjusted index of industrial production (1949 = 100) reached an all-time high of 160.9 in February, compared with 157.8 in January and the previous high of 159.6 in March 1957. The index has recorded six consecutive monthly gains from the August level of 150.2.

Consumer Price Index.—Canada's consumer price index (1949 = 100) went from 125.5 in March to 125.4 in April 1959, compared with 125.2 in April 1958. The April 1959 decline was due solely to a 0.6 per cent drop in the food index; each of the other four group indexes rose 0.2 per cent or less.

The drop in the food index from 120.0 to 119.3 stemmed almost entirely from lower prices for all types of meat and poultry; beef prices went down another two cents a pound. Prices were higher for a few food items, including eggs, canned fruit, and apples.

Wholesale Prices.—Canada's general wholesale price index (1935-39 = 100) was at the 230.8 mark in February and March 1959, compared with 228.3 in March 1958. Increases in five of the major groups in March 1959 were offset by decreases in the remaining three groups.

Largest group increases were in the non-ferrous metals group; the index for that group rose from 174.3 to 176.2 following increases in the prices of copper and copper products and tin ingots. Higher prices for soaps and detergents were the main contributors to a rise from 185.5 to 185.8 in the chemical products group. Very slight increases also occurred in the vegetable products group, iron and iron products, and non-metallic minerals. The index for the animal products group dropped from 255.8 to 254.0; decreases in prices of livestock, fresh meats, and cured meats outweighed increases in the prices of hides and skins, furs and leather.

Farm Prices of Agricultural Products.—Canada's index number of farm prices of agricultural products (1935-39 = 100) dropped from 239.7 in February to 237.4 in March. This second successive decline in 1959 results chiefly from lower prices for cattle, calves and potatoes which more than offset some increase in poultry and egg prices.

Grain.—Overseas export clearances of Canadian wheat in the week ended April 22 totaled 5.8 million bushels compared with 4.7 million bushels in the corresponding week of 1958. Clearances in the August 1-April 22 period declined to 171.6 million bushels from 179.9 million in 1958. Visible supplies in Canadian positions at April 22, 1959 totaled 376 million bushels compared with 375.9 million bushels a week earlier and 359.4 million bushels a year earlier.

Total stocks of the five major Canadian grains in all North American positions at March 31 were estimated at 1,177.6 million bushels compared with 1,372.9 million bushels at March 31, 1958, the record 1,512.2 million bushels total record at March 31, 1957 and the ten-year (1949-58) average of 1,042.9 million bushels.

The estimated March 31 stocks, in millions of bushels, with 1958 totals and ten-year averages, respectively, in brackets, were estimated as follows: wheat, 706.8 (815.8, 589.7); oats, 244.4 (310.6, 255.4); barley, 201.3 (217.1, 170.4); rye, 11.8 (16.4, 18.5); and flaxseed, 13.3 (13.0, 8.8).

Milk.—Milk production in Canada rose to 1,168 million pounds in March 1959 from 1,142 million pounds in March 1958. The January-March total increased from 3,055 million pounds in 1958 to 3,149 million pounds in 1959.

Sales of fluid milk and cream (the latter in terms of milk) totaled 443.1 million pounds in February 1959, a three per cent increase from February 1958. January-February sales amounted to 917.9 million pounds, a four per cent increase from the corresponding period of 1958.

THE FARM FAMILY IN CANADA

HELEN C. ABELL

Our rural community has long been characterized by a predominance of family owned and operated family farms. Local inhabitants identify themselves with this community which satisfies most of their social and economic needs. They generally support and are serviced by local marketing centres or co-operatives.

The size and structure of any community depends mostly on the prevailing type of agriculture in the region, density of population, transportation facilities and the degree of ethnic and religious homogeneity.

In Newfoundland outports the community tends to be small in size. People usually belong to the same ethnic and religious groups and engage in a combination of agricultural, fishing or forestry enterprises. Very much the same conditions prevail over large parts of the other Atlantic provinces and in British Columbia. Farm families in these provinces are generally of British origin. However, there are large groups and areas of French-speaking farm families in some Atlantic provinces, especially in New Brunswick, and families of Russian origin such as the Doukhobors in British Columbia.

In Quebec, early French settlement was largely along the St. Lawrence river and farmsteads were located close to each other. A common tongue and religion did and still continue to help maintain very closely-knit rural communities.

In Ontario, agricultural production is more diversified than in the more easterly provinces. Rural communities are becoming less compact and numerous "Cross-roads general stores", small one-room school houses and small local churches are slowly disappearing. These changes must not be interpreted as an indication of the disappearance of the rural community but rather as a reflection of the expansion in its geographical base. Most farm families are of British descent but some families of French descent are found in the eastern and northern sections of the province and others, of European descent (mainly Dutch families established since the end of the last world war and German families earlier in the century), are farming in various parts of the province.

In the three western provinces, Manitoba, Saskatchewan and Alberta, prairie land is used mainly for grain production and other land for livestock and mixed farming. Most of the farms are large in size and separated from one another by considerable distances, especially in the prairie regions. A rural community is thus likely to encompass a larger area than in other provinces. Farm families are also more heterogeneous, as far as ethnic origin, language, religion and standards of value are concerned. In spite of regional differences in time and pace of settlement, types of farming, nature, size and structure of the community, the most common farms in Canada are farms owned and operated by families that live "at home". In recent years, however, and mostly in areas of specialized farming such as the fruit crop areas of Ontario and the wheat belt of Saskatchewan, there has been a marked increase in the number of farm families moving into urban homes during the winter months.

Major Demographic Changes.—Extensive demographic changes have occurred in Canada since the first days of Confederation. These changes have altered and will continue to modify the structure and the behavior patterns of our rural families and communities.

Census data supply a vivid picture of some of these changes. Of a total population of 3,689,257 in 1871, rural dwellers accounted for 80.4 per cent and urban dwellers for the remaining 19.6 per cent. Since then, each census has shown a declining proportion of rural people. In 1956, only 33.4 per cent of the 16,080,791 Canadians were recorded as rural, and only 16.4 per cent as rural farm people (Table 1).

Within the short span of five years, from 1951 to 1956, rural population declined from 38.4 per cent to 33.4 per cent of the total and the number of rural farm people from 20.2 per cent to 16.4 per cent. During this period the number of people in Canada increased by 2,071,362. The number of urban dwellers increased by 2,086,602 but that of rural dwellers declined by 15,240; the number of rural farm people declined by 196,145 whereas that of rural non-farm people increased by 180,905.

These figures reflect the growth in agricultural productivity, a smaller number of people being able not only to supply the agricultural produce needed by a rapidly increasing population but also to build up surpluses of some farm products.

Table 1.—Changes in Rural Population, as a Percentage of Total Population, Canada, 1871-1956

—	1871	1881	1891	1901	1911	1921
Population, total..........	3,689,257	4,324,810	4,833,239	5,371,315	7,206,643	8,787,949
Rural, as a percentage of total....................	80.4	74.3	68.2	62.5	54.6	50.5
—	1931	1941	1951a)	1951b)	1956b)	
Population, total..........	10,378,756	11,506,655	14,009,429	(14,009,429)	16,080,791	
Rural, as a percentage of total....................	46.3	45.7	43.3	38.4	33.4	
Rural farm, as a percentage of total..................	....	....	....	20.2	16.4	
Rural non-farm, as a percentage of total..........	....	....	....	18.2	17.0	

Source: *Census of Canada.*

a) Before 1951 the urban population was defined as population living in incorporated places. The figure given here conforms to this definition and thus supplies a basis for comparisons among census years.

b) These figures are based on definitions of urban and of rural population used in the 1951 and 1956 census. The total size of population rather than the corporate status now becomes the criterion. The urban population includes all persons residing in cities, towns, and villages of 1,000 and over and persons living in census metropolitan areas.

Implicit in these developments is the increasing interdependence of all segments of the population. Non-farm residents in subsisting local small trade and service centres and people in large urban centres supply an increasing volume of goods and services required by farm people. Farmers, on the other hand, are able to specialize in specific types of agricultural production with the knowledge that goods and services formerly lacking or supplied only by the farm itself are now available in both small or local and large trade centres. Thus, the transition is from a self-sufficient type of farm family living, with a minimum of goods and services, to higher levels or standards which approximate those enjoyed by well-to-do urban dwellers.

Number and Distribution of Occupied Farms, 1901-1956.—In 1901 Canada had 511,073 occupied farms, averaging 124.1 acres per farm. Eighty-seven per cent of these farms were fully owned by their occupants. Up to 1951 each successive decennial census recorded an increase in the number of occupied farms and in the average acreage per farm. Since then the number of occupied farms has decreased but the average acreage per farm has increased even more rapidly than in the pre-1941 period. The proportion of farms "fully owned" has declined from 1911 to 1941 inclusive but increased in 1951 and declined only fractionally in 1956 (Table 2).

The number of occupied farms was smaller in 1951 and smaller yet in 1956 than in 1911 but the average acreage per farm in 1951 was more than double that in 1901 and the acreage in 1956 was even larger. Owner operation of family farms remained the typical type of farming and tenure, over the years. The number of "fully-owned" farms was always a large proportion of the total number of farms; it declined from 88.5 in 1911 to 74.9 in 1941 but then rose to 77.3 in 1951 and only declined to 77.0 in 1956.

In many areas, one of the most striking types of community adjustment to these changing conditions has been the closing of "little red school-houses" and their replacement by centrally located and consolidated schools which serve many rural communities. The school bus now takes the children to school. Rural churches are also in a transitional stage. Many churches have had to close for lack of parishioners and some others because of the scarcity of rural clergymen. Rural churches, the same as rural schools, are passing through a consolidation stage.

Table 3 was organized to indicate in which year, in the first half of the century, the number of occupied farms in each province and in Canada as a whole was at a minimum and the year in which it reached its maximum. It also depicts the variations in the distribution of the number of occupied farms among provinces.

Table 2.—Changes in Number, Acreage, Size and Ownership of Occupied Farms Canada, 1901-1956

—	1901	1911	1921	1931	1941	1951a)	1956a)
Maritime Provinces—							
Number of occupied farms	105,365	104,359	97,788	86,334	77,096	60,083	52,623
Average number of acres per farm	101.7	105.4	104.4	111.7	116.1	128.8	129.6
Percentage of farms "fully owned"	95.1	95.1	95.2	93.7	92.3	92.3	92.7
Quebec—							
Number of occupied farms	140,110	149,701	137,619	135,957	154,669	134,336	122,617
Average number of acres per farm	103.1	104.3	125.4	127.3	116.8	125.0	129.8
Percentage of farms "fully owned"	89.8	92.2	94.5	92.8	92.7	94.3	95.1
Ontario—							
Number of occupied farms	204,054	212,108	198,053	192,174	178,204	149,920	140,602
Average number of acres per farm	104.6	104.5	114.3	118.9	125.6	139.2	141.4
Percentage of farms "fully owned"	79.8	82.1	84.4	81.5	78.4	81.7	83.2
Prairie Provinces—							
Number of occupied farms	55,176	199,203	255,657	288,079	296,469	248,716	232,016
Average number of acres per farm	279.3	289.4	343.9	381.1	405.2	498.0	546.0
Percentage of farms "fully owned"	91.8	89.4	78.5	69.0	58.6	60.8	58.8
British Columbia—							
Number of occupied farms	6,501	16,958	21,973	26,079	26,394	26,406	24,748
Average number of acres per farm	230.3	149.8	130.2	135.8	152.8	178.1	183.4
Percentage of farms "fully owned"	80.2	85.6	84.6	81.3	79.5	84.6	86.2
Canada—							
Number of occupied farms	511,073	682,329	711,090	728,623	732,832	623,091	575,015
Average number of acres per farm	124.1	159.7	198.1	223.9	236.8	279.3	302.5
Percentage of farms "fully owned"	87.0	88.5	85.7	80.1	74.9	77.3	77.0

SOURCE: *Census of Canada.*

a) Including Newfoundland, Yukon and Northwest Territories.

In 1901, of every ten farms in Canada about two were in the Maritime provinces, three in Quebec, four in Ontario and one in the four other provinces.

By 1956 the flow of migration westward had brought about some very great changes in the distribution of occupied farms among provinces and regions. Of every ten farms about one was in the Atlantic provinces, two in Quebec, about two or three in Ontario and about four or five in the four other provinces. These four provinces had all attained their maximum number of occupied farms during the 1930's. The only parts of Canada to record an increase in the number of occupied farms from 1951 to 1956 were the Yukon and the Northwest Territories. Recent developments in northern Canada have led to some increase in population there but climatic conditions prevent a sizeable development of agriculture.

Size of the Farm Family.—Families, all over the world, tend to be larger in rural than in urban areas. For Canada, this phenomenon may be illustrated by census statistics. Centering attention on the 1951 census, for example, one sees that in each province families were larger, on the average, in the rural farm segments than in any other segments of the population (Table 4). Farm families have always been an abundant source of young manpower for industrial or urban areas. The constant flow of young people to cities stems generally from the large size of farm families but more specifically from the underemployment of adult children on some family farms and employment opportunities in cities.

During the 1941-1951 decade, the total number of Canadian families increased from about 2.5 million to 3 million but the average number of persons per family decreased slightly, from a statistical average of 3.9 in 1941 to one of 3.7 in 1951. This trend was evident in all provinces except Newfoundland where the high average of 4.4 in 1941 was maintained in 1951.

The ageing of the rural farm segment of our population is apparent in the changes in the distribution of numbers of farm operators, by age groups,

Table 3.—Changes in Number and Distribution of Occupied Farms, Canada and Provinces, 1901-1956

—	Number and Proportion of occupied farms				Percentage increase in occupied farms from 1901 to 1956 (1901 = 100 per cent)	Recorded census year of maximum and minimum number of occupied farms	
	1901		1956				
	Number	Per cent	Number	Per cent		Maximum	Minimum
Canada	511,073	100.0	575,015	100.0	112.5	1941	1901
Prince Edward Island	13,748	2.7	9,432	1.6	68.6	1911	1956
Nova Scotia	54,478	10.7	21,075	3.7	38.7	1901	1956
New Brunswick	37,006	7.2	22,116	3.8	59.8	1911	1956
Quebec	140,110	27.4	122,617	21.3	87.5	1911	1956
Ontario	204,054	39.9	140,602	24.5	68.9	1911	1956
Manitoba	32,252	6.3	49,201	8.6	152.6	1941	1901
Saskatchewan	13,445	2.6	103,391	18.0	769.0	1941	1901
Alberta	9,479	1.9	79,424	13.8	837.9	1941	1901
British Columbia	6,501	1.3	24,748	4.3	380.7	1941	1901

Source: *Census of Canada.*

Table 4.—Average Number of Persons per Family, Rural Farm, Rural Non-Farm and Urban Families, Canada and Provinces, 1951

—	Canada		Atlantic Provinces			
			Nfld.	P.E.I.	N.S.	N.B.
All families	3.7		4.4	4.0	3.9	4.1
Rural	4.1		4.4	4.1	4.0	4.5
Farm	4.4		4.8	4.1	4.0	4.7
Non-farm	3.9		4.4	4.1	3.9	4.3
Urban	3.5		4.3	3.7	3.8	3.7
	Quebec	Ontario	Man.	Sask.	Alta.	B.C.
All families	4.2	3.4	3.6	3.7	3.7	3.3
Rural	5.0	3.7	4.0	3.9	4.0	3.6
Farm	5.5	3.8	4.1	4.1	4.1	3.8
Non-farm	4.4	3.6	3.7	3.6	3.7	3.5
Urban	3.9	3.3	3.3	3.4	3.3	3.2

Source: Census of Canada.

from 1921 to 1951. (Table 5). There was a marked decline in the percentage of farmers 39 years of age or younger, from 1921 to 1941[1]. This trend was reversed from 1941 to 1951, owing, at least in part, to the establishment of many war veterans on farms since the end of the last world war. Governmental credit assistance to young farmers, in some provinces, may have been another important contributing factor.

Table 5.—Farm Operators Classified by Age Groups, Canada, 1921-1951

Age group	1921	1931	1941	1951
	— proportion of farm operators by age group —			
39 years or less	39.6	31.3	30.8	34.3
40–49	24.7	26.3	23.2	24.8
50–59	18.9	21.9	23.7	21.3
60 and over	16.8	20.5	22.3	19.6
Total	100.0	100.0	100.0	100.0
	— years —			
Average age	45	47	48	47

Source: *Census of Canada.*

The increase in non-farm employment opportunities undoubtedly attracts a larger proportion of young than of middle-aged and older farm people. The average age of the remaining farm operators would thus tend to become higher.

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[1] The group of operators "39 years of age or less" consists mainly of farmers ranging from 20 to 39 years of age. The number of operators below 20 years of age was even less than 0.5 per cent of the total in 1931, 1941 and 1951.

Living Conveniences, Equipment and Facilities.—Canadians enjoy one of the highest levels of living in the world. There are disparities among families in different localities or segments of the population but, nevertheless, there is ample evidence that the gap between rural and urban levels is rapidly narrowing. Rising educational levels, more and better communication and transportation facilities and general economic development are among the factors leading to an improvement in the lot of the rural dweller. Moreover, farming communities sponsor many organizations and activities to promote the economic and social welfare of their people.

Table 6 was set up to portray disparities in the enjoyment of living conveniences between rural and urban families. One may note that, except for passenger cars, the modern conveniences and facilities listed in the table were available to a higher proportion of urban than of rural households. These gaps or differences were smaller in 1951 than in previous census years.

Table 6.—Specified Living Conveniences and Facilities, Rural Farm, Rural Non-Farm and Urban Households, Canada, 1951

—	Canada	Rural			Urban
		Total	Farm	Non-farm	
Number of households	3,409,295	1,254,260	629,785	624,475	2,155,035
			— per cent —		
Proportion of households with:					
Telephone	60	39	44	33	72
Radio	92	87	89	86	95
Passenger car	42	45	52	38	41
Inside running water	74	40	33	46	94
Bath or shower (exclusive use)	57	22	16	28	77
Flush toilet (exclusive use)	64	27	20	35	86
Electricity	87	66	56	76	99
Electric vacuum cleaner	42	21	18	25	53
Powered washing machine	73	64	66	62	77
Mechanical refrigerator	47	26	22	30	59
Gas or electric stove	50	17	13	21	69

Source: *Census of Canada.*

Statistics also indicate that items such as telephone, radio, passenger car and powered washing machine were more widely disseminated in the farm than in the non-farm group of rural households.

A comparison of levels of living or welfare must not ignore the great difference in value systems between rural and urban people. This is an important consideration, even if it cannot be measured statistically or fully understood by people unfamiliar with rural life. Farming, as " a way of life", implies, independence, freedom, co-operation within the family and in the community, concern for the well-being of the family and neighbors and enjoyment of the quiet and beauty of the countryside.

Intangible rural values compensate for the lack of some urban amenities. The increased flow of urban workers to homes located away from large built-up areas bears witness to this human urge to enjoy the calm of country life.

FARM ORGANIZATION, SIFTON-FORK RIVER AREA OF MANITOBA, 1949 AND 1958

L. M. JOHNSON

A comparative analysis of some small farms in the Sifton-Fork River area of Manitoba illustrates some important changes in farm business trends and patterns over the last decade. The data were obtained from two studies conducted by the Economics Division, one in 1949 [1] and the other in 1958 [2]. Twenty-six one quarter-section farms and 22 two quarter-section farms were selected from the 1949 study for comparison with 27 one quarter-section and 27 two quarter-section farms in 1958. About the same general area was covered in both studies and some farmers visited in 1949 were visited again in 1958.

The farms included in the studies were located on soils developed on a high lime till over which sediments of loamy sand and heavy fine sand have been deposited, together with a small area of rendzina-like soils on water-laid deposits of light fine sandy loam to silty clay loam [3]. These soils are subject to wind erosion during prolonged dry spells. Floods may occur on some land because of the overflowing of the many small creeks and rivers in the Duck Mountains to the west. Water is plentiful for livestock and some farms, which have some land suitable for pasture only, have livestock as a major enterprise. However, the general area is suited to mixed or diversified farming although land productivity is considered low. About two-thirds of the land is improved.

Table 1.—General Characteristics of Farms Studied, 102 Selected Farms, Sifton-Fork River Area of Manitoba, 1949 and 1958

—	1949		1958	
	Oue quarter-section	Two quarter-section	One quarter-section	Two quarter-section
Total acres per farm	169	307	164	317
Cropland acres per farm	112	187	124	208
Tenure: full owners —per cent of farms	84	77	96	52
part owners—per cent of farms	8	23	....	44
renters —per cent of farms	8	....	4	4
Average age of operators	38	46	46	49
Average years operating present farm	7	14	12	16
Per cent of farms with tractors	46	73	81	93
Tractors per 100 farms	46	80	85	115
Per cent of farms with combines	4	2	7	22
Per cent of farms with car or truck	65	77	74	89
Cars or trucks per 100 farms	65	89	74	100
Number of farms	26	22	27	27

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[1] The data for 1949 were obtained from farm business studies made that year.

[2] The data for 1958 were from a study of *Changes in Farm Organization*, which is part of a continuing research project being conducted in the Prairie Provinces.

[3] For a more detailed description of the soils of the area, see *Land Classification Map, Grandview Area in Manitoba*, Soils Department, University of Manitoba, Winnipeg, Manitoba, 1944.

Some general characteristics of these farms and of the farm operators are described in Table 1. The average age of the farm operator and the number of years he has worked on his present farm increased between 1949 and 1958. Possibly this would indicate that the younger generation is moving elsewhere to start farming or to other occupations leaving the older men, who have fewer alternative opportunities, to operate these farms. Nearly all operators had attended public school and a few had completed high school. Most of them had about a grade five education. One operator, included in the 1958 study, had taken the diploma course in agriculture. Usually the education of the wives was equal to or above that of their husbands.

Mechanization increased between 1949 and 1958 but some farms are still without a tractor. Combines are rather scarce and the threshing machine is still used on many farms. Some farms have neither a car nor a truck, which may indicate that farms are not as well advanced in modern farming methods as farms in other areas of the province.

Land Use.—The acreages of wheat, oats, and barley increased but flax and other crops, such as rye and buckwheat, were less important in 1958 than in 1949 (Table 2). There was a large increase in the acreages of improved hay and pasture and a decrease in the summerfallow acreage. Total improved acres increased by 11 per cent in both size-groups of farms.

Livestock Numbers.—The total number of animal units per farm decreased between 1949 and 1958 as a result of a reduction in the number of horses (Table 3). However, six of the farms studied in 1958 still used horses as their only source of power. The productive animal units per farm increased, mostly as a result of an increase in the number of cattle. Ninety-six per cent of the farms studied in 1949 kept some cattle compared with 98 per cent in 1958. Sheep were of little importance on these farms. Hogs and poultry were found on about nine in ten farms but were kept mostly for home use.

Labor.—Operator's labor and hired labor remained about the same on these farms during the past ten years (Table 4). The smaller farms showed a slight

Table 2.—Distribution of Cropland Acres, 102 Selected Farms, Sifton-Fork River Area of Manitoba, 1949 and 1958

Crop	1949		1958		Change from 1949	
	One quarter-section	Two quarter-section	One quarter-section	Two quarter-section	One quarter-section	Two quarter-section
	— acres —				— per cent —	
Wheat	10	28	16	29	+ 60	+ 4
Oats	24	34	30	43	+ 25	+ 26
Barley	13	15	10	32	− 23	+113
Flax	15	21	2	7	− 87	− 67
Other	1	7	a)	2	b)	− 71
Improved hay and pasture	12	14	29	36	+142	+157
Summerfallow	37	68	37	59	....	− 13
Total	112	187	124	208	+ 11	+ 11
Number of farms	26	22	27	27		

a) Less than 0.5 acres per farm.
b) Less than one acre change.

Table 3.—Number of Animal Units According to Class of Livestock, 102 Selected Farms, Sifton-Fork River Area of Manitoba, 1958 and 1949

Type	1949		1958		Change from 1949	
	One quarter-section	Two quarter-section	One quarter-section	Two quarter-section	One quarter-section	Two quarter-section
	— average animal units per farm —				— per cent —	
Cattle	7.4	11.4	9.3	12.3	+ 26	+ 8
Sheep	....	....	0.1	0.1	a)	a)
Hogs	0.9	1.3	1.6	1.3	+ 78	....
Poultry	0.6	0.7	0.7	1.0	+ 17	+ 43
Total productive animal units	8.9	13.4	11.7	14.7	+ 31	+ 10
Horses	6.0	7.8	2.8	3.0	− 53	− 62
Total, all livestock	14.9	21.2	14.5	17.7	− 3	− 17
Number of farms	26	22	27	27		

a) One-tenth of an animal unit increase.

increase in unpaid family labor but this was due to there being twice as many children 16 years of age or older on these farms in 1958 than ten years previously. Thus, more of this type of labor would be available for chores and odd jobs which the operator would normally perform himself. This would not necessarily indicate greater labor requirements on these farms.

Capital Investment.—The total investment per farm increased by about 40 per cent between 1949 and 1958 (Table 5). This increase was a result of higher real estate values and an increase in livestock investment on both size-groups of farms. In 1949 total investment ranged from $2,450 to $12,062 on one quarter-section farms and from $3,167 to $16,990 on the two quarter-section farms. In 1958 total investment ranged from $941 to $20,689 on the one quarter-section farms and from $4,882 to $26,648 on the two quarter-section farms.

The higher real estate investment was the result of an 11 per cent increase in improved acres per farm and a general increase in land values. Many farms

Table 4.—Amount of Labor Used on Farms, 102 Selected Farms, Sifton-Fork River Area of Manitoba, 1949 and 1958

Type	1949		1958		Change from 1949	
	One quarter-section	Two quarter-section	One quarter-section	Two quarter-section	One quarter-section	Two quarter-section
	— average months per farm —				— per cent —	
Hired labor	0.1	0.7	0.1	0.7	....	....
Unpaid family labor	1.7	5.6	2.6	4.4	+ 53	− 21
Operator	11.8	12.0	11.7	12.0	a)	....
Total	13.6	18.3	14.4	17.1	+ 6	− 7
Number of farms	26	22	27	27		

a) Less than 0.5 per cent per farm.

Table 5.—Investment in Real Estate, Machinery and Equipment and Livestock, 102 Selected Farms, Sifton-Fork River Area of Manitoba, 1949 and 1958

Type	1949				1958			
	One quarter-section		Two quarter-section		One quarter-section		Two quarter-section	
	Per farm	Per cropland acre	Per farm	Per cropland acre	Per farm	Per cropland acre	Per farm	Per cropland acre
	— average dollars —							
Real estate.......	2,388	21.32	4,564	24.41	4,067	32.80	8,535	41.03
Machinery........	1,793	16.00	3,310	17.70	1,715	13.83	3,036	14.60
Livestock.........	1,149	10.26	1,689	9.03	1,550	12.50	1,889	9.08
Total.....	5,330	47.58	9,563	51.14	7,332	59.13	13,460	64.71
Number of farms..	26		22		27		27	

installed electricity during this period, which also increased the value of buildings. The higher investment in livestock was the result of an increase in productive livestock, accompanied by generally higher prices for cattle. These developments more than offset the decreased investment in horses on these farms. The average value of the machinery complement per farm was less in 1958 than in 1949. This decrease took place in spite of an increase in the number of some machines such as tractors and combines and of a general increase in the price of new farm machinery.

A review of the farm records indicates that in 1949 farmers were in the process of changing from horses to tractors as a source of power. In that year 35 per cent of the farms studied purchased tractors at an average price of $1,290 per machine. Nearly one-third of these tractors were new at the time of purchase. Purchases of general machinery averaged $220 per farm. On some farms there would be some duplication of horse and power machinery during this transition period.

In 1958, only six per cent of the farms studied purchased tractors; the average price was $760 per machine. These tractors were seven years of age or older at time of purchase. During this same year purchase of general machinery averaged only $90 per farm.

The information obtained in 1958 on farm machinery would indicate that many of the machines puchased in 1949 had not yet been replaced. Thus, the machinery complement in 1958 was older and in poorer condition than ten years previously. For example, the average tractor age was five years in 1949 and ten in 1958. Some of the horse equipment on the farms in 1949 has since been scrapped, which would further reduce the inventory value of machinery.

Operating Statement.—Total receipts on these small farms were higher in 1949 than in 1958 (Table 6). This was the outcome of a reduction in the amount of grain sold in 1958 and a lower price for wheat, which more than offset some increases in income from livestock. Flax can usually be sold for cash but little of it was grown in 1958; in 1949, however, the income from flax represented a considerable portion of the income from crop sales.

Total expenses for all farms increased by about six per cent between 1949 and 1958. There was some reduction in outlay for hired custom work, binder twine, seed and fertilizer. However, machinery operating costs, real estate costs, and interest on investment were higher. In 1949, the average cash farm family living expenses averaged $825 per farm on the one quarter-section farms and $1,125 on the two quarter-section farms. In 1958, the average cash farm family living expenses were $730 on the one quarter-section farms and $898 on the two quarter-section farms. This decrease occurred even though the size of the family remained the same during this period. This decrease in living expenses was possibly associated with lower cash receipts, an indication that these farms may tend to buy only the bare necessities.

The decrease in total farm receipts and increase in total farm expenses reduced labor earnings by about 31 per cent in the one quarter-section farm group and 69 per cent in the two quarter-section group of farms. Non-farm income increased somewhat since 1949.

In 1958 the one quarter-section farms had higher labor earnings than the two quarter-section farms. A review of farm records indicates that for the most part the one-quarter units were organized to maximize income from livestock and livestock products. On these farms the total expenditures were relatively lower in comparison to returns. On the other hand, the two quarter-section farms tended to place more emphasis on grain than on livestock production. The livestock enterprise was proportionately smaller on these farms and could have been expanded to utilize the available pasture and hay land more efficiently. Moreover, these two quarter-section farms had considerably larger expenses for machinery, hired labor, real estate, and interest on investment without a corresponding increase in receipts.

Table 6.—Operating Statement, 102 Selected Farms, Sifton-Fork River Area of Manitoba, 1949 and 1958

	1949		1958		Change from 1949	
	One quarter-section	Two quarter-section	One quarter-section	Two quarter-section	One quarter-section	Two quarter-section
	— dollars —				— per cent —	
Receipts						
Cash farm receipts and inventory change	2,035	3,203	1,899	2,530	− 7	− 21
Farm produce used in home	225	307	170	274	− 24	− 11
House rent	100	125	148	188	+ 48	+ 50
Total receipts	2,360	3,635	2,217	2,992	− 6	− 18
Expenses						
Cash operating expenses	944	1,429	883	1,355	− 6	− 5
Depreciation:						
Buildings	72	98	120	168	+67	+ 71
Machinery	268	501	275	443	+ 3	− 12
Interest on capital investment at five per cent	266	478	386	673	+45	+ 41
Total expenses	1,550	2,506	1,664	2,639	+ 7	+ 5
Returns to operator and family for labor and management	810	1,129	553	353	−31	− 69
Non-farm income a)	119	115	175	298	+47	+159
Number of farms	26	22	27	27		

a) Includes family allowance, pensions and off-farm work.

Indebtedness.—During the past decade there has been a general increase in the number of farms with debt and the amount of debt per farm (Table 7). In 1949 about 60 per cent of all farms studied had debts which ranged from $181 to $5,302 per farm. In 1958 about 80 per cent of all farms studied had debts ranging from $150 to $7,436 per farm. Long-term debts (over five years) remained about the same on the one quarter-section farms but there was a relatively large increase in this type of debt on the two quarter-section farms. Long-term loans were used mainly to acquire land to start farming or to expand the present size of business. Government agencies and private individuals were the most important source of credit for long-term debts. Intermediate-term debts (one to five years) were about three times higher in 1958 than in 1949. This type of debt was incurred mainly for machinery and equipment. The main source of credit was the credit union, followed by the Farm Improvement Loans Act and finance companies. Short-term debts (less than one year) were larger on the two quarter-section farms and smaller on the one quarter-section farms in 1958 than in 1949. Tax arrears made up a large portion of short-term debts. Sources of credit for this type of debt were oil companies, garages and doctors; they granted this type of credit mainly for the sake of business convenience.

Table 7.—Farm Indebtedness, 102 Selected Farms, Sifton-Fork River Area of Manitoba, 1949 and 1958

Item	1949		1958	
	One quarter-section	Two quarter-section	One quarter-section	Two quarter-section
	— average dollars per farm —			
Type of debt				
Long-term debt	265	0	269	422
Intermediate-term debt	183	70	415	226
Short-term debt	202	162	74	300
Average debt per farm	650	232	758	948
Relative importance of debt				
Percentage of farms with debt	69	50	84	81
Percentage of farms with long-term debt	27	0	20	22
Percentage of farms with intermediate-term debt	31	9	44	37
Percentage of farms with short-term debt	62	50	52	78
Number of farms	26	22	27	27

Summary.—A comparison of patterns of organization on a group of farms in the Sifton-Fork River area between 1949 and 1958 illustrates some of the changes which occurred on the small farms in this area. The average age of the farm operator and the number of years he had operated his present farm increased during this period. Improved acres per farm increased, farms were somewhat more mechanized but machinery was older and machinery investment lower. Total farm investment increased and was accompanied by an increase in average debts per farm. Total farm receipts decreased but farm expenses have increased and operator and family labor earnings thus declined between 1949 and 1958.

CORRIGENDUM and ADDENDUM

On page 65 of the June issue of The Economic Annalist, insert the following between the third and the fourth lines of the first paragraph:

"August 1, 1959 to July 31, 1962 and will enter into force on".

At the bottom of page 69, add the following:

The International Wheat Agreement 1959 has come into force. Of the nine exporting countries instruments of acceptance were deposited on or before July 16 by the United States, Canada and France and notifications of intention were given on or before July 16 by Argentina, Australia, Italy, Mexico, Spain and Sweden. The United States and Canada together hold more than two-thirds of the votes of exporting countries. Importing countries which have either deposited instruments of acceptance or accession or given notifications of intention hold more than two-thirds of the votes of importing countries.

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A NEW INTERNATIONAL WHEAT AGREEMENT[1]

The International Wheat Agreement which is due to expire on July 31, 1959 has been renewed for the fourth time in the postwar period. The first Agreement was negotiated in 1949. The new Agreement covers the period August 1 if ratified by a sucffiient number of wheat exporting and importing countries

The Highlights

The objectives as set out in the new Agreement are much more comprehensive than in preceding Agreements. To the original objective of assuring "supplies of wheat and wheat flour to importing countries and markets for wheat and flour to exporting countries at equitable and stable prices" has been added the following:

> "to promote the expansion of the international trade in wheat and wheat flour and to secure the freest possible flow of this trade in the interests of both exporting and importing countries; to overcome the serious hardship caused to producers and consumers by burdensome surpluses and critical shortages of wheat; to encourage the use and consumption of wheat and wheat flour generally, and in particular, so as to improve health and nutrition in countries where the possibility of increased consumption exists; and, in general to further international co-operation in connection with world wheat problems, recognizing the relationship of the trade in wheat to the economic stability of markets for other agricultural products."

The new Agreement will include the United Kingdom. The exporting countries will include Italy, Mexico and Spain, in addition to Argentina, Australia, Canada, France, Sweden and the United States. Exporting countries will total nine, compared with six in the previous agreement and four in the first two agreements.

There is a different price range. The maximum price is $1.90 per bushel, as against $2.00 in the current Agreement, and the minimum price is $1.50 per bushel, which remains unchanged, for No. 1 Manitoba Northern Wheat, basis in store Fort William/Port Arthur.

The International Wheat Council will have increased powers and functions. It is now authorized to hold an annual review of the world wheat situation relating to wheat production, stocks and marketing and the disposal of wheat surpluses on non-commercial terms. Provision is also made for the Council to study the factors affecting the consumption of wheat in various countries and the means of promoting increased consumption.

There are different rights and obligations. Under previous Agreements member countries had rights and obligations expressed in terms of specific guaranteed quantities of wheat. These import and export quantities were only applicable when wheat prices were at the minimum or at the maximum. In contrast with these rights and obligations at extremes of the price range, the new Agreement involves an obligation by individual importing countries to purchase annually at prices within the price range below the maximum price a specified minimum percentage of their commercial requirements.

---

[1] By R. M. Esdale of the Grain Division, Department of Trade and Commerce, a member of the Canadian Delegation to the second session of the United Nations Conference on Wheat, and Frank Shefrin of the Department of Agriculture, a member of the Delegation to the first session of the Conference, October 1958 and February-March 1959.

In addition to commercial transactions, the International Wheat Council Secretariat will also maintain records of special transactions (including surplus disposals) defined as those which depart from normal commercial practice as a result of government intervention.

The Background

The IWA has since 1949 functioned through conditions ranging from a strong demand for wheat in the immediate post World War II period to a world surplus at the present time. Under the first IWA importing countries committed guaranteed quantities which bore a close relationship to their normal imports, and exporters were called upon to meet commitments at the maximum price. But with the emergence of wheat surplus both in exporting and importing countries in 1953, the volume of wheat moving within the Agreement since 1953-54 has formed a relatively insubstantial part of world imports.

Thus under the 1949-53 Agreement out of Canada's total of wheat and flour exports, 71 per cent were made under the Agreement. Under the 1956-59 Agreement covering the first two years the percentages had dropped to 22 per cent and 25 per cent respectively. Participating exporting and importing countries had transacted the major part of their wheat trade, commercial and other, outside the IWA, although IWA's importing countries purchased over 90 per cent of their import requirements from IWA exporting countries. The quantities transacted under the Agreement represented about 33 per cent of the total trade between IWA exporting and importing countries and about 20 per cent of the world wheat and flour trade.

The environment in which the new Agreement was negotiated was considerably different to that in 1949. The reasons for this change were analyzed in the Report of the Third Session of the Grain Group of the Food and Agriculture Organization in 1958. This report concluded that first, there is a chronic tendency towards production in excess of effective demand resulting in the accumulation of wheat surpluses. In the main this tendency has been attributed to national policies of price and/or income guarantees to producers combined with the application of modern technological advances to production methods. Secondly, there has developed an intricate network of government measures ancillary to national wheat policies, which regulate the free movement of wheat in international trade. Thirdly, there is a vast potential demand for wheat or flour in low-income countries which lack the foreign exchange resources to make this demand effective. Finally, independent measures of surplus disposal have assumed an increasing proportion of world wheat trade.

It is therefore significant that governments were able to arrive at an Agreement which contains many new features, and covers a greater volume of the world wheat trade.

The Terms

Rights and Obligations.—Under the new agreement the importing countries agree to purchase not less than specified percentages of their commercial wheat requirements from the export members at prices within the price range. The importing countries listed to date with their specified percentages are as follows:

Austria	45
Belgium (inc. Luxembourg)	80
Brazil	50
Ceylon	80
Cuba	90
Denmark	60
Dominican Republic	90
Federal Republic of Germany	70
Fed. of Rhodesia and Nyasaland	90
Greece	50
Haiti	90
India	70
Indonesia	70
Ireland	90
Israel	60
Japan	50
Korea	90
New Zealand	90
Netherlands	75

Norway	60
Peru	70
Portugal	85
Philippines	70
Saudi Arabia	70
Switzerland	80
Union of S. Africa	90
United Arab Republic	30
United Kingdom	80
Vatican City	100
Venezuela	70

On the basis of the average period 1954-55 to 1957-58 the commercial imports of the importing countries from all sources (member and non-member exporters) totaled 16.1 million tons (591.6 mil. bu.). The weighted average of the individual percentages stated by the thirty importers result in a yearly minimum commitment to member exporters of 11.4 million tons (418.9 mil. bu.) or 70.5 per cent of their total commercial purchases. Allowing for other countries likely to accede to the Agreement, the weighted percentage would be fractionally higher and the quantity approximately 12.3 million metric tons (450 mil. bu.).

The importers will, it is expected, be buying a good deal more wheat from member exporters than is represented by their formal minimum commitments. As all commercial sales have to be recorded the volume may reach 550 to 575 million bushels, although the percentage commitment will represent only about 450 million bushels. Both these figures are a substantial increase over the 195 million bushels recorded during the 1957-58 crop year under the present Agreement, but lower than those recorded under the IWA of 1949/53 when the United Kingdom was a member.

Under previous Agreements both member importing and exporting countries had rights and obligations expressed in terms of specific guaranteed quantities of wheat. These import and export quantities were only applicable when wheat prices were at the minimum or at the maximum. Thus in contrast with the rights and obligations at the extremes of the price range of previous Agreements, the new Agreement involves a continuous obligation by individual importing countries to purchase annually at prices within the price range a specified minimum percentage of their commercial requirements.

The exporting countries, on the other hand, undertake to supply the total commercial requirements of importing countries as long as prices are below the maximum. There is no quantitative or percentage division among exporters of the individual or total requirements of importers. Exporting countries will compete individually for the importers' requirements.

In previous agreements, if an exporter wished to sell wheat below the minimum, the sale was permitted but was not recordable. Under the rights and obligations section of the new Agreement, exporters have agreed to make wheat available to importers up to their total commercial requirements at prices within the agreed price range and all sales will be recorded. A sale under the minimum would fall outside this obligation and would represent a breach of the exporter's undertaking. Although no attempt is made to prescribe in advance the minimum prices for grades of wheat other than No. 1 Northern, the Agreement does call for prompt consideration by the Council in the light of advice received from the Advisory Committee on Price Equivalents whenever "a situation has arisen or threatens imminently to arise which appears likely to jeopardize the objectives of the Agreement with regard to the minimum price".

When prices reach the maximum, the exporting countries undertake to make available to the importing countries quantities of wheat based on the average of commercial purchases from them over a five year period, which moves forward year by year with the Agreement. The Agreement refers to this quantitative obligation and entitlement at the maximum as a "datum quantity". For each exporting country the "datum quantity" is equivalent to the average annual commercial purchases from it by *all* the importing countries during the relevant base period.

The obligation of exporting countries is related to these "datum quantities" when a maximum price situation has been reached. Otherwise, when prices are within the range, the exporters in association with one another are obliged to meet the commercial requirements of the importers. When a maximum price declaration has been made in respect of a particular exporting country (or in respect of all exporting countries) that country is obligated to make available for purchase at the maximum price the difference between its "datum quantity" and actual commercial purchases from it by the importing countries up to that time in the crop year in question.

It is to be noted however that purchases from a particular exporting country beyond an importing country's total "balance of entitlement" cannot be counted against the discharge of the exporting country's "balance of commitment" to other importers. Thus, it would not be possible for Canada to sell to the United Kingdom over and above the United Kingdom's aggregate "entitlement" from all the exporters and then argue that these additional sales should count against Canada's "balance of commitment" obligation at the maximum to other importers. Collectively the exporters must keep in hand enough maximum price wheat to meet the "balances of entitlement" of the individual importing countries. This is not dissimilar from the position under the previous Agreement in which in making Class 2 sales to some customers it was necessary to keep an eye on the unfulfilled guarantee quantities of other importing countries which Canada might be called upon to cover.

If *all* exporters are at the maximum, importers are released from their percentage obligations and may, if they wish, obtain their commercial needs from any other source. If the maximum price declaration has been declared only for one or more, but not all exporters, importers' percentage obligations remain in effect in relation to those exporting countries not at the maximum.

There are a number of other provisions in the Agreement in respect of obligations and rights covering such items as short crops, and adjustment of obligation at the maximum price by consent. It also provides for importing countries to estimate and indicate at the beginning of each crop year, without commitment, the quantities they are prepared to purchase commercially during the crop year; and for exporting countries to indicate supplies available for sale commercially.

Recording of Transactions:—The International Wheat Council is to keep a record for each crop year of commercial purchases made by member importing countries not only from member exporting countries but also from other countries. All commercial sales to importing countries will thus be reported to the International Wheat Council in order to determine whether countries have met their stated percentage obligations and also for purposes of establishing quantitative obligations and entitlements when wheat is selling at the maximum.

In addition to commercial transactions, provision is made for the first time for the recording of special transactions (including surplus disposals) defined as those which depart from normal commercial practice as a result of government intervention. These transactions are not part of the rights and obligations of the member countries.

All commercial sales and non-commercial transactions will, therefore, be within the scope of the Agreement which will facilitate a detailed examination of the international trade in wheat as a whole.

Surplus Disposal.—The Agreement provides for means of reviewing the surplus disposal activities of member countries. Exporting and importing countries are to inform the Council of the measures taken by them in disposing of surpluses to secure compliance with the following principles: that the solution to the problems involved in the disposal of surpluses of wheat should be sought wherever possible, through efforts to increase consumption; that disposals should take place in an orderly manner; and that, where surpluses are disposed of under special terms, exporting and importing countries concerned should undertake that such arrangements will be made without harmful interference with normal patterns of production and international commercial trade.

As indicated in the section on the recording of transactions the Council is to keep a record for each crop year of all special transactions entered into by signatory countries. The Agreement defines a special transaction as one which, whether or not within the price range, includes features introduced by the government of a country concerned which do not conform with usual commercial practices. In particular these include sales on long term credit resulting from government intervention; sales under tied government loans; sales for inconvertible currency; barter transactions; bilateral trading agreements; and gifts or grants.

Irregular Exporting and Importing Countries.—The Agreement provides that the rules affecting designated exporters and importers are applicable for importers who become exporters and exporters who have to import wheat. It requires importing countries that also export or resell wheat or flour to endeavor to do so at prices consistent with the price range and to avoid any action which would be prejudicial to the operation of the Agreement. The new article also provides that exporting countries which have to import wheat during the period of the Agreement endeavor to purchase their requirements from other member exporting countries at prices within the price range and to avoid any action which would damage the operation of the Agreement.

Complaints and Disputes.—In the event of any complaint or dispute by either exporter or importer, the new Agreement provides for consultative procedure for reaching a satisfactory settlement. If after all possibilities of settlement provided by the Council and its committees have been exhausted, the country concerned still feels that its interests are being seriously prejudiced it may withdraw from the Agreement.

Administrative Machinery.—As in previous agreement provision is made for the establishment of an International Wheat Council. The seat of the Council is in London. Each exporting and importing country has a voting member and may be represented by one delegate, alternates and advisers.

A non-voting chairman and a vice-chairman will be elected by Council, such officials to hold office for one year. The Council itself is required to meet at least twice a year. Responsible to, and under the general direction of, the Council are two important Committees namely the Executive Committee and the Advisory Committee on Price Equivalents.

The Executive Committee, consisting of representatives from four exporting countries and eight importing countries, in addition to specific assignments, may have delegated to it any of the Council's powers or functions. The members of the Advisory Committee on Price Equivalents, primarily a technical committee, are representatives from four exporting and four importing countries. The Committee will keep under continuous review the movement of prices and will advise Council with regard to allowances for differences of quality when prices are at the minimum.

The Council will also have a Secretariat, headed by an Executive Secretary, to perform such work as required by the Council and its Committees.

PASTURE COSTS IN FIVE COUNTIES OF SOUTHWESTERN ONTARIO, 1958

H. W. Trevor

Information relating to pasture utilization and costs was obtained in 1958 from a sample of beef cattle farms in Southwestern Ontario, operated under different systems of management. These farms were located in the counties of Bruce, Grey, Huron, Wellington and Middlesex.

Feed costs usually represent a major proportion of the total cost of raising beef cattle and pasture costs themselves are an important part of total feed costs. In our study, pasture costs were calculated from data pertaining to owned land and these costs can then be compared with costs or rates on rented improved and unimproved pasture land.

Rented Pasture.—Twelve observations of rented improved pasture rates were obtained. The annual rate for 100 acres averaged $553 and ranged from $350 to $800. Forty-two per cent of the pastures were rented for $500 or less; 33 per cent between $500 and $700; and 25 per cent for more than $700. Depending on the seasonal average precipitation, weather conditions, and management practices the carrying capacity of these improved pastures usually ranges from 20 to 45 mature steers, on the basis of a grazing period of four to five and a half months.

Table 1.—Percentage Distribution of Pasture Costs on Owned Land, 26 Selected Beef Cattle Farms, Southwestern Ontario, 1958

—	Per cent of total costs
Interest on capital at 5 per cent	41
Labor (other than fence maintenance)	5
Fencing maintenance (labor and materials)	11
Taxes	17
Use of machinery and equipment	8
Seed, fertilizer and sprays	18

Rented improved pasture rates were generally lower in Bruce and Grey counties than in the other counties. Most of the improved pastures in these two counties have been grazed under a more or less continuous grass system as contrasted with a system of rotating grass with cereals and other crops.

Rough unimproved pastures, with either open or woodland areas, are not usually available for rent. But when these are available (mostly in Bruce and Grey counties) the rental rate for 100 acres seldom exceeds $250. Some rough pastures are rented at the annual rate of $150 for 100 acres.

Probably a more common way of obtaining grazing facilities, other than pasturing on owned land, is placing cattle on another farmer's land. In this case the cattle is handled by the owner of the land. Custom rates are usually quoted on a per head per month basis. Predominant monthly rates under this system were $2 for a weaned calf or yearling; $3 for a two-year steer or heifer; and $4 for a nursing cow.

Owned Pasture.—Pasture costs on owned land were obtained for the 1953-58 six-year period. On the average, these were higher than the prevailing comparable rental pasture rates. The average cost was $657 for 100 acres. Arranged

Table 2.—Pasture Costs a) for Different Types of Beef Cattle Farms, 26 Selected Farms, Southwestern Ontario, 1953-58

—	Purchased			Home raised		All farms	
				Beef herds			
	Finishing on grass with grain	Combination of finishing in the stable and on grass	Finishing 2-year old steers on grass without grain	Cows milked	Cows not milked		
	— dollars per acre —					dollars	Per cent of total
Maintenance of fences: a)							
Labor b)	.19	.29	.27	.61	.57	.33	5.0
Materials	.34	.38	.07	.27	.62	.37	5.7
Fertilizer, seed, sprays and other miscellaneous cash expenses	.83	2.71	1.24	.69	.75	1.21	18.4
Labor (other than fence maintenance) b)	.12	.57	.17	.34	.45	.31	4.7
Use of machinery	.57	.73	.46	.50	.22	.52	7.9
Taxes	.96	1.30	1.72	.92	1.24	1.15	17.5
Interest c)	2.01	3.43	3.17	3.10	2.82	2.68	40.8
Total cost	5.02	9.41	7.10	6.43	6.67	6.57	100.0
Cash cost only	2.70	5.12	3.49	2.38	2.83	3.25	
Estimated value of pasture land per acre	40.00	68.59	63.43	61.85	56.46	53.54	
	— number —						
Total acres, pasture	1,141	571	268	304	575	2859	
Number of farms	5	7	3	5	6	26	

a) The major portion of depreciation is assumed to be accounted for under maintenance.
b) Labor was costed at 75 cents per hour, the predominant wage rate in 1958.
c) Interest rate of 5 per cent.

in the same groups as the rental pasture rates, 12 per cent of the 26 observations had costs of $500 or less; 38 per cent between $500 and $700; and 50 per cent had costs exceeding $700.

A breakdown of the costs into the main component groups is given in Table 1. Cash expenditures comprised 49 per cent of total average costs and the calculated charges for interest on capital investment, depreciation and labor made up the balance. Thus, cash outlay averaged $325 for 100 acres of pasture. This was roughly the situation for all farm types in which cattle were included.

The higher costs for owned pasture are compensated in many cases by higher carrying capacities. This is attributed to higher rates of fertilizer application, better cultivation and better cultural and pasture management practices.

Costs of owned pastures were calculated for groups of farms with five systems of cattle production or types of beef enterprise. These costs are described in Table 2. Total pasture costs ranged from $5.02 an acre on specialized beef farms where all cattle were finished on grass to higher rates on farms where some cattle were finished in the stable and some on grass, with or without supplementary feeding.

PUBLICATIONS OF THE ECONOMICS DIVISION

1957-1958 Supplement to Federal Agricultural Assistance Programs, Canada, 1945-1956. Cameron, Marjorie R., Ottawa, February 1959. pp. ii + 141-181.

A continuation of the chronological outline of federal assistance to agriculture presented in *Federal Agricultural Assistance Programs, Canada,* 1945-1956 and in the 1956-1957 Supplement.

Credit Unions in Canada, 1957. Heighton, V. A., Ottawa, December 1958. pp. 18.

An annual review of the activities of credit unions and of the Canadian Co-operative Credit Society.

Crop Production Requirements in Manitoba—Machinery, Labor and Materials. Garland, S. W. and L. M. Johnson. Ottawa, December 1958. pp. 34.

A study of crop production inputs in six of the major soil areas of Manitoba.

Canadian Agriculture in 1958—A Chronology of Federal Policies. Dobson, Gordon J., Ottawa, March 1959. pp. 50.

The seventh in a series of chronological reports on changes in federal policies affecting agriculture and important events connected with these policies.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal, 34.

Statistical Yearbook, 1958. Tenth issue. Statistical Office of the United Nations, Department of Economic and Social Affairs. New York, 1958. pp. 612. Available at the U.N. Bookshop or Columbia University Press, 2960 Broadway, (clothbound, $8 or paperbound, $6.50).

The statistical yearbook reviews the progress made in world economic and social fields and the expansion of production and also provides statistics on social, cultural and related fields.

According to the yearbook the volume of goods produced declined sligthly in 1958. World exports dropped five per cent from the 1957 level because of a marked drop in export prices of primary commodities and a reduction in the volume of exports from industrial countries. The reduction in international trade stemmed from the decline in economic activity in the United States.

World population was estimated at about 2,795 million in mid-1957, compared with 2,493 million in 1950—an annual rate of increase of 1.6 per cent.

The yearbook contains 187 statistical tables on demographic, economic, financial, social and cultural subjects, generally covering: a) the immediate prewar period, b) 1948, and c) about seven most recent years.

An Annual Review of World Production and Consumption of Fertilizers, 1958. Page, H. J. Land and Water Use Branch, Agriculture Division, Food and Agriculture Organization of the U.N. Rome, 1958. pp. 103.

A record and an analysis of production and consumption of fertilizers by countries and continents and for the world as a whole.

10

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

J. F. BOOTH, Director

AUGUST 1959 **Vol. XXIX No. 4**

CONTENTS

Page

The Economic Situation 75

Quantities of Food Purchased in Urban Areas, 1955 . . . . *Charlotte I. Johnston* 77

Farm Practices in Beef Production in Five Selected Counties of Ontario, 1956 . . . . *H. W. Trevor* 83

Food Purchases, St. John's, Newfoundland, 1955 . . . . *Charlotte I. Johnston and L. E. Drayton* 90

Publications of the Economics Division 95

Other Publications 96

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Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
	1935-39=100							1949=100		1949=100
1913	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.5	247.6	208.8	118.1	113.4	154.9
1957	227.4	210.8	163.6	258.0	231.0	255.8	211.3	121.9	118.6	155.1
1958	....	....	....	....	....	....	....	125.1	122·1	151.7
1958										
July	227.0	219.4	159.4	279.3	241.6	....	....	124.7	121.4	151.4
August	226.8	215.9	156.5	275.2	238.5	263.9	213.7	125.2	122.6	150.2
Sept	227.1	211.1	155.2	266.9	236.1	....	....	125.6	122.9	150.5
Oct	226.9	211.8	154.4	269.3	236.4	....	....	126.0	123.4	151.4
Nov	228.5	212.1	155.2	269.1	236.5	....	....	126.3	123.2	154.7
Dec	229.1	217.6	156.5	278.7	239.3	....	....	126.2	122.2	155.1
1959										
Jan	229.7	217.7	156.6	278.7	242.0	258.8	218.1	126.1	122.3	157.8
Feb	230.8	214.8	155.6	274.0	239.7	....	....	125.7	121.2	160.9
Mar	230.8	212.4	155.4	269.5	237.3	....	....	125.5	120.0	159.7
April	231.2	213.7	156.4	271.0	236.7	....	....	125.4	119.3	161.3
May	231.2	218.8	166.5	271.0	238.7	....	....	125.6	118.5	
June	....	....	....	....	....	....	....	....	....	....

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1956—July 1957 include final barley and wheat payments announced June 11, 1958.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

Gross National Product.—The recovery from the 1957-58 recession which began in the latter part of 1958 lifted the seasonally adjusted gross national product to a level of $33.4 billion in the first quarter of 1959. This represents a gain of two per cent over the fourth quarter of 1958 and, at annual rates, the G.N.P. in the first quarter of 1959 was running at a level about four per cent above the average for 1958 as a whole.

The volume of non-agricultural output in the fourth quarter of 1958 had recovered to a point slightly above the pre-recession peak. With prices fairly stable the advance in the first quarter of 1959 represents a further gain in volume from this previous high point.

Business inventory accumulation and consumer expenditure were the two major elements of expansion. The large-scale resumption of stock-building was a notable development; it followed a period during which heavy inventory liquidation had gradually given way to a more neutral position, little change occurring in either direction. Consumer expenditure was a little hesitant during part of 1958 but increased further in the first quarter of 1959, thus continuing the advance which started in the final quarter of 1958.

Both national and personal income, seasonally adjusted, advanced between two and three per cent from the fourth quarter of 1958 to the first quarter of 1959. A marked increase occurred in the labor income component of these two aggregates; they rose 3.5 per cent, the highest rise since early in 1956. This higher labor income reflected the combined effect of higher levels of employment and a continued advance in average weekly earnings. Transfer payments to persons declined five per cent, mainly reflecting a drop in unemployment insurance payments.

The increase in the physical volume of production originated mainly in mining and in the durable goods sector of manufacturing; support, however, continued to come from the service-producing industries. In the construction industry, output declined as a result of the drop in outlays for new housing and a small decline in non-residential building.

Population.—Canada's population reached 17,442,000 at June 1, 1959, an increase of 394,000 since June 1, 1958. This increase compares with a gain of 459,000 for the preceding 12 months, the record gain of 508,000 for the period from June 1, 1956 to June 1, 1957, and the average increase of 414,000 for the five years between the censuses of 1951 and 1956. The smaller size of the increase in the last 12 months was due to a decrease in the number of immigrants from about 195,000 in 1957-58 to only 115,000 in 1958-59. This decrease was partly offset by a rise in natural increase and a small decrease in emigration.

Numerical increases were recorded in all provinces but some of the rates of gain followed different trends from previous years. Immigration decreases were reflected mostly in population changes in Ontario, Quebec and British Columbia which in previous years had received the larger proportion of immigrants. Decreases in interprovincial migration affected the growth of several provinces. In British Columbia, which had the largest rate of increase in the two previous years, a net movement to other provinces in contrast with large gains from interprovincial migration in 1956-57 and 1957-58 and a crop in immigrants resulted in the third lowest rate of gain among the ten provinces.

The population estimates at June 1 this year, with 000's omitted and figures for June 1, 1958 in brackets were as follows: Newfoundland, 449 (438); Prince Edward Island, 102 (100); Nova Scotia, 716 (710); New Brunswick, 590 (577); Quebec, 4,999 (4,884); Ontario, 5,952 (5,803); Manitoba, 885 (870); Saskatchewan, 902 (888); Alberta, 1,243 (1,201); British Columbia, 1,570 (1,544); Yukon Territory, 13 (13); Northwest Territories, 21 (20).

Consumer Prices.—Canada's consumer price index rose from 125.6 in May to 125.9 in June 1959. Increases in the food, shelter, and "other" commodities and services group indexes were partly offset by a decrease in the clothing index. The household operation index did not change. An increase from 118.5 to 119.1 in the food index stemmed almost entirely from a sharp seasonal rise of 35 per cent in potato prices. Some other fresh vegetables and fruits rose slightly and pork advanced fractionally. Beef, coffee and sugar prices continued to drop to somewhat lower levels.

Farm Cash Income.—Farm cash income from the sale of farm products and participation payments on previous years' grain crops in the first quarter of 1959 was estimated at $652 million, the highest first-quarter estimate recorded to date and six per cent higher than the corresponding total of $613 million for the first quarter of 1958.

Farm cash receipts were higher than in the first quarter of 1958 in each of the nine provinces included in the farm accounts of the Dominion Bureau of Statistics, except Prince Edward Island and New Brunswick which recorded declines of about 15 per cent. The decreases in these two provinces can be attributed almost entirely to smaller returns from the sale of potatoes. In the other provinces, increases ranged from a low of three per cent in British Columbia to a high of 11 per cent in Ontario.

Returns from the sale of field crops and participation payments on previous years' grain crops were estimated at about $255 million compared with $233 million in the first quarter of 1958. Higher returns from sales of wheat, barley, flaxseed and tobacco accounted for most of the increase; these higher returns were somewhat tempered by reduced income from the sale of potatoes, lower Canadian Wheat Board participation payments and much higher repayments of cash advances.

Farmers in western Canada received during the first quarter of 1959 about $18 million as western grain producers' acreage payments and disbursements under the provisions of the Prairie Farm Assistance Act. These payments compare with $14.6 million received during the first quarter of 1958, solely under the provisions of the Prairie Farm Assistance Act.

In the Prairie Provinces wheat marketings and prices were higher than in the first quarter of 1958. The higher average farm price for wheat can be attributed to marketings of higher quality wheat; initial payments for the various grades are the same for the 1958-59 as for the previous crop. Returns from the sale of barley were also higher and can be attributed to higher marketings, average barley prices having been only slightly higher. A large increase in marketings of flaxseed more than offset a price decline and provided cash returns of $7.2 million compared with $4.3 million in the first quarter of 1958.

Receipts from sales of livestock and animal products rose to $389 million from $373 million in the first quarter of 1958. Except for sales of cattle and calves, returns from all products in this group were estimated at higher levels than in the first quarter of 1958. Lower cash receipts from sales of cattle can be attributed to a drop in marketings which more than offset a marked increase in prices; income from calves remained unchanged. Higher returns from the sale of hogs more than offset the decline in income from cattle. The larger cash receipts from the sale of hogs resulted from higher marketings which more than offset prices lower than in the first quarter of 1958. Returns from other livestock and animal products increased slightly from the first quarter of last year, these increases being mostly attributable to larger marketings.

QUANTITIES OF FOOD PURCHASED IN URBAN AREAS, 1955

CHARLOTTE I. JOHNSTON

Figures of the annual disappearance in Canada as a whole for nearly all primary foods are available from the period of the last world war, and the series is complete for many from 1926.[1] Data of consumption of foods in the various regions of Canada are lacking, however.

During 1953 and 1955 the Dominion Bureau of Statistics conducted surveys of expenditures on all foods by a sample of families in Halifax, Montreal, Toronto, Winnipeg and Vancouver.[2] The quantities of most foods purchased were also recorded and the quantity data from the more recent survey in 1955 are the basis of this article.

A different set of families reported each month, usually for a two-week period at the beginning of the month. The number of families in the sample ranged from 124 in Halifax to 769 in Montreal. The sample size in each city was proportional to the population in cities of 30,000 or more in the region represented by the city and thus proportional composite figures were easily obtained from the survey data.

The survey sample was limited to families containing two to four adults, two adults and one to four children and three adults and one child and with incomes ranging from $2,000 to $6,500.

Scope of the Data.—The chief items purchased in 13 main classes of food are listed (Table 1). Total quantity figures for the classes are not given, except for "Eggs", because the survey participants were not asked to record the quantities bought of certain items of each class except "Eggs". Those items were foods infrequently bought, or those of which the quantities were difficult to assess. The most important, in terms of money value, were those of the bakery products group. The retail value of the items omitted from that class amounted to 3.4 per cent of the total expenditure on food in the five cities combined. The retail value of the other foods for which quantities were not entered on the schedules was 8.4 per cent of the total food cost.

Although the purpose of the survey was primarily to obtain expenditure figures the quantity data were judged, from an examination of a sample of the schedules, to be generally reliable. The two or three exceptions had a total retail value of less than two per cent of the total expenditure on food in the five cities.

Thus the quantities of certain foods purchased to be eaten at home, amounting in value to 13.7 per cent of the five city food expenditures, are excluded from the table. In addition, no record was made in the survey of the quantities of the various foods eaten away from home, for which 9.6 per cent of the total food cost was paid. If the food eaten away from home had been bought in retail stores it would, of course, have been a smaller proportion of the total expenditure. No estimate can be made of the quantities of the different foods eaten away from home as it cannot be assumed that they were eaten in proportions similar to those eaten at home.

The reported data therefore do not show a complete picture of food consumption in each city and cannot be compared with national statistics of consumption without taking the omissions into consideration. In a comparison

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[1] The Agriculture Division of the Dominion Bureau of Statistics and the Economics Division of the Department of Agriculture. *Handbook of Agricultural Statistics Part IV Food Consumption in Canada* 1926-55. Queen's Printer, Ottawa, 1958.

[2] Dominion Bureau of Statistics. *Urban Family Food Expenditure* 1953. Queen's Printer, Ottawa, 1955.

Dominion Bureau of Statistics, *Urban Family Food Expenditure* 1955. Queen's Printer, Ottawa, 1957.

Table 1.—Quantities of Food Items[a] Purchased per Person per week in Five Cities, 1955

Food	Unit	Quantity per Person per Week					
		Halifax	Montreal	Toronto	Winnipeg	Vancouver	Five Cities
Bakery Products							
Bread	lb.	1.59	2.12	2.02	1.87	1.98	2.00
Buns and rolls	doz.	0.09	0.08	0.12	0.10	0.11	0.10
Cereals							
Baby cereal	lb.	0.04	0.02	0.04	0.02	0.02	0.03
Breakfast cereals, prepared	lb.	0.15	0.09	0.16	0.11	0.16	0.13
Breakfast cereals, to be cooked	lb.	0.10	0.09	0.13	0.15	0.27	0.14
Flour	lb.	0.71	0.25	0.36	0.51	0.73	0.43
Macaroni, etc.	lb.	0.09	0.21	0.13	0.14	0.13	0.16
Mixes	lb.	0.08	0.06	0.11	0.08	0.12	0.08
Dairy Products							
Buttermilk, chocolate milk, etc.	qt.	0.14	0.05	0.21	0.11	0.07	0.11
Cheese, bulk	lb.	0.05	0.06	0.09	0.05	0.09	0.07
Cheese, packaged	lb.	0.06	0.10	0.09	0.09	0.10	0.10
Cream	qt.	0.04	0.07	0.05	0.17	0.10	0.08
Ice cream	qt.	0.05	0.07	0.08	0.08	0.12	0.08
Milk, canned and powdered	oz.	7.36	2.00	3.81	2.72	6.52	3.77
Milk, fresh	qt.	2.15	2.24	2.24	2.19	2.13	2.21
Eggs	doz.	0.37	0.36	0.45	0.42	0.49	0.42
Fats and Oils							
Butter	lb.	0.33	0.49	0.40	0.38	0.33	0.41
Lard	lb.	0.14	0.03	0.05	0.06	0.05	0.04
Margarine	lb.	0.14	0.00	0.14	0.14	0.27	0.11
Shortening, vegetable	lb.	0.14	0.09	0.09	0.08	0.13	0.10
Fish							
Cured and fresh[b]	lb.	0.21	0.13	0.10	0.08	0.16	0.13
Food, Frozen							
Fruit and vegetables	oz.	0.79	1.24	3.45	1.72	2.82	2.12
Fruit and juice	oz.	0.52	0.73	1.84	0.98	0.94	1.06
Vegetables	oz.	0.27	0.51	1.61	0.74	1.88	1.06
Fruit, Canned and Dried							
Peaches, canned	fl.oz.	1.79	2.82	2.18	1.27	2.01	2.24
Juice, apple, canned	fl.oz.	1.70	1.42	1.72	1.50	4.90	2.19
Fruit, dried	lb.	0.08	0.07	0.09	0.10	0.21	0.10
Fruit, Fresh							
Apples	lb.	0.52	0.78	0.66	0.51	0.55	0.65
Bananas	lb.	0.22	0.56	0.41	0.33	0.42	0.44
Grapefruit	lb.	0.23	0.39	0.36	0.15	0.27	0.32
Oranges	doz.	0.21	0.21	0.20	0.17	0.27	0.22
Groceries, General							
Baby food, canned	fl.oz.	2.65	1.94	2.49	1.53	2.29	2.14
Coffee	lb.	0.04	0.11	0.11	0.13	0.14	0.11
Desserts, packaged	oz.	1.10	0.91	1.16	0.93	1.24	1.05
Drinks, health	oz.	0.11	0.06	0.11	0.09	0.10	0.09
Drinks, soft	fl.oz.	4.23	17.03	8.38	7.48	4.00	10.30
Peanut butter and other butter spreads	oz.	0.70	0.80	0.86	0.58	1.19	0.86
Pickles, etc.	oz.	1.67	2.12	2.76	1.76	2.41	2.26
Salad dressing, etc.	oz.	0.46	0.64	0.74	0.63	1.41	0.80
Salt, spices, etc.	oz.	1.03	1.61	1.68	1.68	2.14	1.70
Soup	fl.oz.	4.23	5.39	6.07	4.88	6.50	5.63
Sugar	lb.	0.78	0.64	0.83	0.91	0.90	0.78
Tea	lb.	0.08	0.06	0.09	0.05	0.09	0.07
Meat and Poultry							
Meat[c]	lb.	1.63	2.31	2.15	1.92	2.26	2.17
Beef[c]	lb.	0.76	1.15	0.99	0.74	0.99	1.00
Brisket, flank, etc., fresh	lb.	0.04	0.07	0.11	0.05	0.08	0.08
Hamburg and minced	lb.	0.14	0.24	0.15	0.15	0.17	0.19
Loin, fresh	lb.	0.10	0.33	0.21	0.13	0.15	0.22

Table 1.—Quantities of Food Items[a] Purchased per Person per week in Five Cities, 1955—Concluded

Food	Unit	Quantity per Person per Week					
		Halifax	Montreal	Toronto	Winnipeg	Vancouver	Five Cities
MEAT AND POULTRY (Conc.)							
Rib, fresh	lb.	0.13	0.13	0.13	0.14	0.18	0.14
Round and rump, fresh	lb.	0.12	0.24	0.20	0.12	0.17	0.19
Shoulder, fresh	lb.	0.15	0.09	0.12	0.10	0.12	0.11
Stewing	lb.	0.08	0.05	0.07	0.05	0.12	0.07
Lamb and mutton	lb.	0.04	0.05	0.06	0.03	0.09	0.06
Liver	lb.	0.05	0.06	0.07	0.06	0.07	0.06
Meat, canned	lb.	0.06	0.06	0.06	0.08	0.06	0.06
Meat, cooked[d]	lb.	0.16	0.08	0.18	0.18	0.20	0.15
Bologna	lb.	0.07	0.03	0.06	0.04	0.07	0.05
Other	lb.	0.09	0.05	0.12	0.14	0.13	0.10
Pork[c]	lb.	0.44	0.58	0.59	0.56	0.62	0.58
Bacon	lb.	0.11	0.11	0.19	0.15	0.19	0.15
Ham, fresh	lb.	0.01	0.01	0.10	0.03	0.03	0.05
Ham, smoked[d]	lb.	0.06	0.14	0.07	0.07	0.08	0.10
Loin, fresh	lb.	0.07	0.10	0.15	0.14	0.14	0.12
Shoulder, fresh	lb.	0.10	0.08	0.10	0.11	0.08	0.09
Shoulder, smoked	lb.	0.09	0.05	0.07	0.06	0.10	0.07
Sausages	lb.	0.07	0.14	0.14	0.13	0.17	0.14
Veal	lb.	0.05	0.19	0.06	0.14	0.06	0.12
Chicken and fowl	lb.	0.18	0.44	0.29	0.22	0.27	0.32
VEGETABLES, CANNED AND DRIED							
Beans, baked, canned	fl.oz.	2.59	1.96	2.29	1.90	2.40	2.16
Corn, canned	fl.oz.	1.50	2.40	2.36	2.13	3.44	2.50
Peas, canned	fl.oz.	3.62	3.68	3.39	2.03	3.07	3.28
Tomatoes and juice, canned	fl.oz.	3.46	9.07	6.69	4.55	6.92	7.11
Tomatoes, canned	fl.oz.	0.98	2.92	2.05	1.16	2.04	2.18
Juice, tomato, canned	fl.oz.	2.48	6.15	4.64	3.39	4.88	4.93
Vegetables, dried	lb.	0.02	0.01	0.01	0.01	0.01	0.01
VEGETABLES, FRESH							
Cauliflower	lb.	0.03	0.05	0.09	0.06	0.12	0.07
Green and yellow	lb.	0.80	1.12	1.19	0.75	1.25	1.09
Beans	lb.	0.04	0.08	0.11	0.01	0.03	0.06
Cabbage	lb.	0.18	0.15	0.27	0.20	0.26	0.21
Carrots	lb.	0.42	0.44	0.39	0.22	0.48	0.40
Celery	lb.	0.04	0.18	0.20	0.15	0.21	0.18
Lettuce	lb.	0.09	0.23	0.18	0.16	0.22	0.20
Spinach	lb.	0.03	0.04	0.04	0.01	0.05	0.04
Onions	lb.	0.25	0.28	0.30	0.27	0.31	0.29
Potatoes	lb.	2.64	2.67	2.21	1.82	1.90	2.30
Tomatoes	lb.	0.16	0.35	0.29	0.25	0.24	0.29
Number of Families	....	124	769	578	288	417	2,176
Persons per Family	....	3.73	3.27	3.08	3.23	3.30	3.25

[a] The quantities of certain minor items of each group except "Eggs", and of the food eaten away from home, are omitted.

[b] Excluding frozen fish.

[c] Excluding items not listed.

[d] Cooked ham is included in "Ham, smoked".

with other consumption figures it should also be borne in mind that the quantities reported of meat, fruit, vegetables and other products are of the foods as sold in retail stores.

It was not possible with the staff available to measure the sampling variability of the many items of food, and small differences between city purchases, especially of those made irregularly, should not be regarded seriously. On the other hand, with data expressed in quantities per person per week an apparently small quantity difference may be large on a relative basis and of considerable importance.

The main value of the quantity data shown, which do cover a very large part of the food consumed, is the considerable light cast on the general patterns of consumption in the five cities which may be of interest to those concerned with producing and marketing food and to nutritionists.

The restrictions of the sample only partially eliminated differences in family type and income among the cities. The average family income of the survey families ranged from $3,882 in Montreal to $4,262 in Toronto. The variation in average family size was from three persons in Toronto to four persons in Halifax. Quantities purchased per person, rather than per family, are presented to overcome differences in family size. As children were a larger proportion of the persons in the Halifax than in the other city samples, it would be expected that a little less meat but more milk would be consumed per person by the Halifax families.

Bakery Products and Cereals.—The survey families of Halifax and Vancouver devoted less of their food money to buying products already baked and more of it to buying cereal foods, most of which were to be cooked at home, than did those of the other cities (Table 2).

The range in quantity of bread bought per person per week was about half a pound, but if the flour purchased had been made into bread the range in bread consumption among four cities, excluding Vancouver, would have been greatly reduced. Owing to the large amount of flour bought in Vancouver the total bread equivalent there, was from four to five tenths of a pound per person higher than in the other cities. It may have been that proportionally more of the flour bought in Vancouver was used for baking things other than bread; although the quantity of mixes purchased was highest per person in that city, expenditure per person for cakes, etc. was much less than in Montreal and Toronto. In Montreal less than average home baking was indicated by the relatively low rate of purchase of flour and mixes and high expenditure for cakes and other unlisted bakery products.

Table 2.—Distribution of the Food Dollar, Five Cities, 1955[a]

FOOD CLASS	Percentage of Total Expenditure on Food					
	Halifax	Montreal	Toronto	Winnipeg	Vancouver	Five Cities
	—per cent—					
Bakery Products	7.5	8.4	8.2	8.6	7.3	8.1
Cereals	3.5	2.0	2.6	2.8	3.2	2.6
Dairy Products	13.6	10.0	11.6	12.6	12.3	11.3
Eggs	4.4	3.3	4.2	3.7	4.3	3.8
Fats and Oils	6.3	5.6	5.4	6.1	5.9	5.7
Fish[b]	3.2	1.6	2.1	2.0	2.2	2.0
Food, Frozen	0.8	0.6	1.9	1.0	1.1	1.1
Fruit, Canned and Dried	2.8	2.1	2.4	2.5	2.9	2.4
Fruit, Fresh	5.4	5.1	5.3	5.1	5.0	5.2
Groceries, General	14.8	13.4	14.0	15.0	15.0	14.1
Meat and Poultry	22.3	27.6	23.8	22.3	23.2	25.0
Vegetables, Canned and Dried	3.3	3.0	2.8	2.6	3.0	2.9
Vegetables, Fresh	6.2	6.1	6.7	5.4	6.3	6.2
Food Eaten Out	5.4	10.4	8.4	9.7	6.8	8.8
Board out of Town	0.5	0.8	0.6	0.6	1.5	0.8
	100.0	100.0	100.0	100.0	100.0	100.0
Weekly Food Expenditure per Person	4.95	6.80	6.52	5.49	6.53	6.38

[a] SOURCE: Dominion Bureau of Statistics. *Urban Family Food Expenditure*, 1955. Queen's Printer, Ottawa, 1957.
[b] Frozen fish is included in "Food, Frozen".

Breakfast cereals for cooking were purchased in especially large quantity per person in Vancouver. Macaroni and similar products were most popular in Montreal.

Dairy Products.—Dairy products as a whole took a larger part of the food budget in Halifax than in the other cities. Nevertheless, the quantity of fresh milk purchased per person varied little in the five cities and that of cheese, fluid cream and ice cream was relatively low in Halifax.

The market for cheddar cheese was apparently best in Toronto and Vancouver, whereas packaged cheese was bought in about equal quantities per person in all the cities except Halifax.

The quantity of cream bought per person in Winnipeg was outstanding. In that city 56 per cent of the weekly reports showed a purchase of cream but in no other city was the percentage as high as 40. The expenditure per quart for cream was considerably lower in Winnipeg than in the other cities, so the butter fat content was very likely lower in the cream bought in Winnipeg.

Over three times as much canned and powdered milk was reported per person in both Halifax and Vancouver as in Montreal. The items in that group of products were not specified but an approximation of the quantities bought of each in each city was possible from a knowledge of their relative prices. Evaporated milk was found to account for most of the weight of the group, from about 80 per cent in Toronto to over 90 per cent in Halifax.

A fluid milk equivalent was obtained for the fresh milk, buttermilk and chocolate milk, cream and computed amounts of canned and powdered milk purchased in each city. The fluid milk equivalent of the purchases and the estimated milk requirements of the sample families were as follows:

	Halifax	Montreal	Toronto	Winnipeg	Vancouver
		—quarts per person per week—			
Milk equivalent of purchase	2.7	2.5	2.8	2.6	2.7
Estimated requirements[a]	3.1	2.8	2.8	2.9	2.9

[a] Estimated requirements for milk were computed on the basis of data contained in *Healthful Eating,* Nutrition Division, Department of National Health and Welfare, Ottawa 1956, p. 27.

The milk products bought for use at home appeared to fall somewhat below the desirable level of consumption in most cities. Whether additional quantities bought at school and elsewhere compensated for any deficiencies is not known.

Eggs.—There was considerable variation in the number of eggs bought per person per week in the five cities. Reported purchases per person were about 30 per cent higher in Vancouver than in Halifax or Montreal.

In Winnipeg eggs were listed as bought in only 66 per cent of the weekly schedules whereas the corresponding percentages in the other cities ranged from 80 to 86.

Fats and Oils.—Purchases of margarine were particularly high in Vancouver. If, as the high rate of purchase of flour in that city suggests, home baking was carried on more extensively there, some of the margarine was probably used for that purpose.

In Montreal the rate of purchase of butter did not differ greatly from the amount of butter and margarine bought per person in the other cities, excluding Vancouver.

Fish.—Purchases per person of cured and fresh fish were considerably higher in Halifax than in Vancouver, the other seacoast city. The lowest reported rate of purchase was in Winnipeg. Although it is the city farthest from the ocean and the variety of sea fish offered there may be smaller than in Halifax and Vancouver, fresh water fish is in good supply, but apparently the habit of eating fish is not as prevalent there as in the other cities.

Food, Frozen.—Purchases per person of frozen fruit and vegetables were over four times as great in Toronto as in Halifax. The difference may be partly explained by higher prices in Halifax. The expenditure per pound for frozen fruit and vegetables in Toronto was about 80 per cent of that in Halifax.

Fruit.—In Montreal purchases per person were highest for canned peaches, fresh apples, bananas and grapefruit but lowest for canned apple juice and dried fruit. The highest rates of purchase of the latter items and of oranges, both in dozens and money value, were recorded in Vancouver. It is surprising that purchases of dried fruit were not greater than average in Winnipeg, the city farthest from fruit growing areas. Purchases, per person, of fresh apples were little less in Winnipeg than in Halifax and Vancouver which are near famous apple districts. Possibly home grown apples may have supplemented purchases to some extent in the latter cities.

The purchase of apple juice was reported in 28 per cent of the Vancouver weekly records but in not more than 15 per cent of those of the other cities. The greater demand for it in Vancouver suggests the possibility of expanding the market for apple juice in other cities.

Groceries, General.—In keeping with the higher proportion of young children in the Halifax survey families the greatest quantity per person of baby foods was bought in that city.

Reported coffee purchases per person were highest in Vancouver and those of tea in Vancouver were also relatively high. On the other hand Vancouver families did not buy soft drinks, at least for use at home, to the same extent as did the Montreal families.

Sugar was the only item in the group of which a relatively high quantity was bought in Winnipeg.

Meat and Poultry.—In Montreal the purchases per person of both meat and poultry exceeded those of the other cities. The types of meat with highest rates of purchase in Montreal were beef, particularly the more expensive cuts but also hamburg and other minced beef, ham, which is also relatively expensive, and veal. Thus the meat bill per person was highest in Montreal and a larger part of the food expenditure was devoted to meat in that city than elsewhere.

Purchases per person were highest of lamb and mutton and of sausages in Vancouver. Toronto shared with Vancouver the highest rate of purchase of bacon. The low reported purchase per person of meat in Halifax is accounted for in part, but not wholly, by the high proportion of children in the survey families, a value a little higher in other cities of "other" meat of which the quantity was not stated, and greater purchases per person of fish.

Vegetables.—The well known sources of vitamins A and C, canned tomatoes and tomato juice, were purchased in much larger quantity per person in Montreal than in the other cities, whereas relatively small quantities per person were bought in Halifax and Winnipeg. Evidence of the popularity of baked beans in the Atlantic Provinces was given by the larger purchases per person in Halifax of both cooked and raw beans.

The Vancouver families bought more per person of the green and yellow fresh vegetables which are rich in vitamin A than did those in the other cities. The extensive market gardens in the vicinity for which there is a long growing season, and the availability of produce from California, no doubt affected the quantity bought there. In Winnipeg not only green and yellow vegetables but even potatoes were purchased in small quantities per person. A smaller proportion of the food dollar was assigned to vegetables, both canned and fresh, in Winnipeg than in any of the other cities.

Relation of Purchases to Income.—The relative ability of the survey families in the five cities to pay for food is indicated by their rates of income per person. They were: Toronto, $1,384; Winnipeg, $1,267; Vancouver, $1,255; Montreal, $1,187 and Halifax, $1,052.

Income per person could explain the relatively low rates of purchase of many foods in Halifax and although many of the food items were bought in largest quantity per person in Vancouver, which was of only medium rank according to income, a number, for instance cereals and margarine, are among the cheaper foods. Although the rate of purchase of fresh vegetables in Vancouver was higher than in Toronto a lower expenditure per pound was made for them.

On the other hand, ability to pay for food is not an explanation for the low rates of purchase in Winnipeg and the relatively large purchases of many foods in Montreal, of which meat and fresh fruit are expensive. Eating habits and preferences for food in Montreal and for other commodities in Winnipeg were apparently influences in determining the outlay of money for food by the families of those cities.

FARM PRACTICES IN BEEF PRODUCTION IN FIVE SELECTED COUNTIES OF ONTARIO, 1956

H. W. TREVOR

Information on practices followed in beef production was obtained from 154 beef cattle farmers in five Ontario counties during the summer of 1956. These farmers were located in the counties of Grey, Bruce, Huron and Dufferin and in the northern half of Wellington county. These counties were selected because they are all in the largest and most concentrated beef-producing area of Ontario.

In this article [1], we shall be concerned only with practices such as breeding, feeding, sheltering and marketing.

Breeding

Only a small proportion of the operators favored a short breeding season which would give a more uniform calf crop. For instance, several operators kept their bull on pasture with the cows in June and July only. The operators who preferred late spring calves pastured the bull with the cows during August and September. Some operators allowed the bull to roam with the cows during July and August and then again in October and in the first part of November.

The usual breeding practice was to allow the sire to stay on pasture with all cows during most of the grazing season. A quiet bull was left with the cows all the time. Dangerous bulls were allowed to be with the cows at night only: they would be busy grazing and not very likely to cause trouble.

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[1] This article summarizes only part of the findings of a broader study of beef cattle operations, including farm organization and problems inherent in a beef cattle enterprise as well as farm practices followed in that enterprise.

About ten per cent of the farms which kept bulls for breeding purposes followed the practice of keeping a bull with a few cows at a time, in a small pasture.

Numbers of cows served per bull ranged from seven to 75 [1], averaging about 22 cows per bull.

About 52 per cent of the herds had less than 20 cows, 31 per cent had between 20 and 29, 11 per cent had between 30 and 39, and six per cent had more than 40 cows per bull.

Roughly two-thirds of the operators of surveyed beef herds practiced field breeding. On one in every five farms the farmers followed the practice of bringing the cows, when ready, to the bull, for service. The remaining 15 per cent of the farm operators practiced artificial insemination. Many of them complained about the number of needed repeats or failures resulting from the operation.

Some farmers combined summer field breeding with the supervised breeding of individual cows in the barn during the winter months. Some farmers also had a few cows artificially inseminated, as a trial experiment.

Feeding

Competent feeding is essential to the success of any beef enterprise. Some types of beef farms predetermine the feeding practices to be used; other types offer possibilities for variations and, consequently, depend more on the judgment and ingenuity of the individual operator.

Generally speaking, feeding practices differ with variations in pasture resources, kinds and prices of feed supplies, ages of animals, types of markets and the operator's personal experiences and preferences.

Young Calves.—On farms with herds kept entirely for beef production, the calves were usually raised to be sold either as stockers or butcher steers; they remained with their mothers till they were from six to eight months old. For most of them the ration till weaning time was limited to milk and grass.

A greater proportion of fall than spring calves were fed small amounts of grain when one or two months old. The grain usually consisted of rolled oats or calf meal and was later replaced by chopped mixed grain. By weaning time the calves would have eaten from 80 to 150 pounds of grain.

Only a very few farms in southwestern Ontario resorted to creep-feeding.

On farms with dual purpose herds where operators kept some or all cows for milk and selling cream as well as for raising beef calves, calf feeding practices varied more than on farms with herds kept entirely for beef production. Few calves from these farms were sold as stockers or feeders. Usually they were kept and fed on the farm till ready for market as finished cattle or baby beeves. Pail feeding was a common practice but some calves were usually allowed to suckle cows of a more pronounced beef type.

Pail-fed calves received whole milk only for a short time after birth. Within a few days they were given whole milk diluted with skim milk; within a month most calves were fed skim milk only. Small amounts of dry rolled oats or calf starter usually supplemented the ration of skim milk. (Some—not too many—operators mixed small amounts of bran or calf meal with the skim milk.) Dry whole oats and/or calf starter was gradually replaced by chopped mixed grains such as oats, barley and corn. The amount of grain fed was progressively increased till it reached 1.5 to 3 pounds a day.

It is difficult to estimate the total quantity of grain given to a pail-fed calf during the period of skim milk feeding. Milk and grain being interchangeable the amounts fed varied greatly from farm to farm, even when calves were raised for similar purposes. On the whole, however, pail-fed calves were fed considerably more grain than suckling calves. By the time a pail-fed calf reached the age of six to eight months it would have consumed between 300 and 400 pounds of grain and other concentrates. Only on a very few farms calves raised on skim milk were fed less than 300 pounds of grain during their first six months.

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[1] One operator had a bull to serve 60 cows and another one bull to serve 75 cows.

Baby Beeves.—Of course, a calf raised to be sold as baby beef was fed more intensively than a calf raised to become a butcher steer. A baby beef calf must be very well fed from the very first days after birth. Whether suckling its mother or pail-fed in a stable, it must get a good supply of milk and be given a generous grain ration in the early stages of its development, so that it may learn to eat grain before weaning time. After weaning, it must be brought to full feed as rapidly as possible. One farm operator expressed it this way: "We give them all the grain they can eat from the day they can eat it".

Roughly speaking, baby beef calves were fed up to 500 pounds of grain and other concentrates before they were six months old. Afterwards and till the day they were shipped to market they consumed an additional 1,000 to 1,500 pounds of grain and other concentrates, plus about three quarters of a ton of hay or its equivalent (one pound of hay equals three pounds of silage).

Though fewer and fewer farm operators specialize in selling baby beeves, many farmers were still doing so, partly because some of their animals were well suited for this purpose and partly because they wanted to spread the sales of their cattle over the year. Calves showing an exceptionally rapid growth and some heifer calves not needed for breeding stock were often raised for baby beeves. Preference for heifers, as baby beeves, was due to two reasons. Heifer calves seem to be able to put on a proper finish a little sooner than steer calves and baby beef heifers are not discriminated against at the packing plants whereas prices are often lower for butcher heifers than for butcher steers. It was not unusual, therefore, to find farms on which some calves were prepared for the baby beef market. These calves were expected to reach a suitable finish at the age of 12 to 14 months and at a weight of 750 to 850 pounds. Some baby beef heifers were sold when they were not yet one year old and weighed less than 750 pounds.

The total grain consumption per baby beef animal was between 1,500 and 2,000 pounds. Some farm operators fed their baby beef calves more generously. At marketing time, baby beeves ranged in weight from 650 to 850 pounds. Some calves, whether born in the fall or in the spring, never left the barn but were kept inside till ready to be shipped to market.

On farms where the primary objective is to utilize grass and other roughage, raising baby beeves does not seem to be a suitable method of producing beef.

Weanling Calves.—The weaned beef calves not intended for baby beeves or for pure bred stock were usually separated from their dams at the age of six or seven months when they weighed from 350 to 440 pounds. As most beef calves were born in the spring the weaning took place mostly in the fall. Though a considerable number of these calves were brought to southwestern Ontario from the Western provinces and from Manitoulin Island, many were born and raised on local beef farms. In Bruce and Grey counties the proportion of locally raised to purchased beef calves was apparently greater than in the more southerly counties of southwestern Ontario, where more farmers depended partially or even entirely on purchased animals.

Practices followed in feeding weaned calves varied greatly, according to the purpose for which the animals were prepared and the approximate length of time alloted for the animals to attain the degree of finish required by the intended market. These, in turn, depended on: (1) expected prices for beef cattle, (2) available pasture supply, (3) quality and quantity of home-grown feed, (4) personal preferences of the farmers, and (5) amount of effort the operator was able and willing to devote to beef production.

Weanling calves to be fattened within one year.—Calves expected to be fattened within a year after weaning got better treatment and much larger rations than calves allowed to live till the ripe age of 24 to 30 months.

Fattening cattle at about 18 months meant feeding relatively more of expensive and less of cheaper feed. Weanling calves prepared for slaughter within one year were not "roughed" through the winter. From the fall till the next spring, when they were turned out on pasture, these calves would get from 600 to 900 pounds of grain. They went to pasture as heavier animals and, in most cases, were fed an additional 130 to 270 pounds of grain during the last six to eight weeks of summer grazing. Some farm operators did not stop feeding grain even during the early part of grazing.

At the time of marketing, weanling calves fattened within one year were similar to baby beeves, except that they were somewhat older and heavier.

Weanling calves raised for feeders or for sale after more than one year of feeding.—Weaned calves destined to be sold as yearling feeders, or wintered more than once, were "roughed" through their first winter. Rations fed during that period were not expected to fatten the calves. Often they were barely adequate to provide for the growth and maintenance of bodies without stunting them. Main gain in weight and some fattening was expected to take place as a result of grazing and not from winter feeding.

The daily winter ration consisted of as much hay as the calf could clean up [1], about four to five pounds of silage [2], free access to salt and minerals, and about two pounds of oats mixed with other grain. Some commercial protein concentrates were sometimes added to the grain mixture.

In the period of about six months after weaning, the calf would consume about 0.9 tons of hay equivalent (three pounds of silage equals one pound of hay), and from 350 to 450 pounds of grain and other concentrates. However, the range of grain consumption was from none to about 660 pounds. In most cases the amount of grain fed was estimated at about 400 pounds.

The consumption of silage varied from very little to about 12 pounds daily. However, only a small proportion of farmers fed silage to calves.

Feeding of grain was usually discontinued after the middle of May when yearlings were sent to pasture.

Yearlings.—The present-day market for mature slaughter cattle favors animals weighing from 900 to 1,000 pounds but also accepts them even when heavier than 1,200 pounds. Because of the possibility to market cattle at different stages of their growth and finish, the period of feeding yearlings could be limited to several weeks or it could be prolonged to more than a year. Generally speaking, longer periods of feeding require more pasture and roughage but less grain per animal. Operators of beef farms adjust their practices of feeding yearlings to variations in the quality and quantity of available feed supplies, variations in response of different animals to the same rations, and shifts in market conditions which make the postponement or the advance of the date of the sale desirable.

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[1] Calves were always given the best hay available on the farm. Usually it was a leafy hay with some legume grasses in it.

[2] Only a small proportion of farmers fed silage to calves.

Finishing of yearlings off grass.—Finishing off grass was usually practiced on farms with large pasture resources and with land fairly low in value[1]. The operators of these farms tried to raise their cattle mainly on grass and roughage. Their major objective was to process and "sell" grass because growing grass was the best use for their land.

Yearlings intended to be finished off grass were wintered on roughage alone, or roughage with only a very small ration of grain. This ration usually consisted of about two pounds but sometimes ran up to five pounds of grain chop a day. Grain feeding was always discontinued as soon as cattle were sent to pasture. Cattle finished off grass were expected to get their major gain in weight and to fatten up from grazing[2]. Away from pasture these cattle were fed rations only sufficient to maintain their natural growth and to allow them to return to grazing in a healthy condition.

Most of the cattle off grass were slaughtered when about 2¼ to 2½ years old. However, some farm operators would not sell poorly developed steers at the end of their second season of grazing but wintered and sent them to pasture for a third time and then sold them as three-year olds or even older animals. Some operators bought two-year old steers in the spring and sold them off grass in the early fall. Feeding of poor roughage in winter and inferior quality of cattle were the main reasons for having underdeveloped cattle at the end of the second grazing season.

At the end of their first season of pasturing the weight of yearling feeders ranged from 625 to 800 pounds. In the late summer or early fall of the next year (now 2¼ to 2½ years of age) their weight was from 850 to 1,150 pounds. Some three-year old animals weighed up to 1,250 pounds.

Finishing off grass is a common practice on many beef farms in Bruce and Grey counties but is less frequent in the more southerly areas.

Finishing of yearling feeders on grain.—There are many different ways to fatten mature cattle on grain. Feeding of young calves for baby beeves and of weanling calves to be fattened within one year has already been described (See pages 85, 86).

Feeding grain on grass.—Some yearlings, even after they had been roughed through winter, were in fairly good flesh at the peak of the pasturing season. Sometimes these animals were given grain during the last two or three weeks of grazing and then put on a heavy feeding of grain and quickly fattened as light steers for the fall market. Favorable market conditions and a rather small supply of forage encourage this practice.

Of all farm operators interviewed, 24 per cent in Grey county, 24 per cent in Bruce, 59 per cent in Huron, 38 per cent in Dufferin, and 46 per cent in Wellington county fed grain to cattle on grass. For all five counties the average proportion of farms feeding grain on grass was 37 per cent.

More and more farmers choose feeding some grain during the later stages of pasturing.

Finishing on Grain in the Stable.—Other yearlings were not prepared for the fall but for the following winter and spring markets. A fairly good supply of feeds and an expectation of better prices fostered this type of feeding.

Few steers were roughed through their third winter and finished as three-year old cattle on grass with or without grain feeding.

During the period of grain feeding in the stable steers were started on small rations. These rations were progressively increased, reaching the rate of six to 12 pounds but mostly 10 pounds of grain a day in three to five weeks of feeding. If the operators wanted to complete fattening in the shortest time possible the grain rations were further progressively increased to as much as 18 pounds daily.

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[1] There were exceptions. Some very much improved and exceptionally well managed pastures were used for the same purpose.

[2] Though mature cattle "off grass" are not finished as well as cattle fed grain, they do fatten on pasture because they do not need nutrients for growth in the same way as younger animals do. Of course, finishing off grass takes more time than finishing on grain.

To encourage a greater consumption of grain, some operators would not follow the usual practice of supplying the cattle with all the hay they would clean up but limit the amount of forage and give cattle all the grain they could eat without "getting off-feed".[1]

The total amount of grain fed to yearlings till they were marketed ranged from 600 to 1,500 pounds, the usual range being from 1,300 to 1,400 pounds per animal. Of course, this was in addition to the amount of grain fed the same cattle when they were calves.

Consumption of roughage during the same feeding period came near to 1¼ tons of hay per head or its equivalent in hay and silage. The amount of forage varied directly with the length of the feeding period and inversely with the quantity of grain consumed.

At the beginning of the feeding period in the fall most of the yearlings were about 18 months old, weighing 700 to 825 pounds each. However, they varied in age as well as in weight since different calves were born at different times of the year[2]. At the time of marketing the finished cattle usually weighed from 900 to 1,100 pounds.

Of all farms surveyed 82 per cent bought minerals, 67 per cent concentrates, 59 per cent grain, and 15 per cent bought hay.

Thirty-eight per cent of the farms fed corn silage. Of these, 84 per cent had upright silos, 13 per cent had horizontal (above ground) silos, and three per cent had pit silos (trench). Ten per cent of the farms fed grass silage.

In 1956 only 15 per cent of the farmers gave stilbestrol to their cattle. However, 32 per cent of all operators expressed the intention of doing so in 1957.

Of all farms studied six per cent had hay self-feeders and three per cent had silage self-feeders; less than one per cent had grain self-feeders.

Pasture.—The economy of beef production greatly depends on an adequate supply of pasture, the cost of nutrients from pasture comparing favorably with costs of nutrients from other feeds.

The average capacity for all improved pastures was calculated as 2.6 months of grazing per acre, per head. For long-term improved pastures it was 1.9 months, for rotation pasture 3.0 months, and for the greatly improved pastures 5.1 months of grazing per acre, per head. The carrying capacity of rough pasture averaged only 1.1 months.

On many farms all or at least some cattle were grazed on more than one kind of pasture. Cattle often were kept on the same pasture till about the end of July or the middle of August. After the first cutting of hay on a large number of farms cattle were allowed to graze both the early summer pasture and the fields which had been used for hay.

Of all farms visited during the summer of 1956 only about 40 per cent had the opportunity to lease or to buy more pasture if they wanted to do so.

Sheltering

Most of the surveyed farms (95 per cent) had standard[3] barns which in most cases had been constructed not by the present but by earlier owners. Some of the barns were still equipped with stalls where beef cattle remained tied throughout most of the feeding period. However, most barns had few stalls left and were partitioned into two or more pens of different sizes. This arrangement generally provided housing for a fairly large number of cattle and reduced labor requirements.

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[1] An animal "gets off-feed" when it reaches a state of indigestion caused by overeating grain.

[2] All calves which wintered once were classified as yearlings.

[3] Most of these were bank barns.

In many barns cattle milled around in closed pens under rather crowded conditions. Frequently the floor space in pens was limited to 30 square feet per yearling even when the cattle were given little opportunity for exercise outside. Some farmers kept a few cattle tied even when the largest part of the barn was partitioned into pens. Cows and feeders in the last stages of fattening were more commonly kept tied than younger or less finished animals.

All feeder cattle were tied on seven per cent of farms with standard barns. Part of the feeder cattle were tied on 16 per cent of these farms and on the remaining 77 per cent of the farms all cattle were loose, but in pens.

On 75 per cent of the farms with cattle in pens doors to these pens were kept closed most of the time. Only one-third of the operators of these farms let their cattle out each day. Two-thirds of the operators allowed their feeders to go outside only once a week or a fortnight, or even less often. Cleaning of the pens was always an occasion for the cattle to be outside.

On the remaining 25 per cent of the farms cattle were free to go in and out of the pens at will. Pen doors in these barns either did not exist or were left open day and night and the barn doors were closed only during extreme weather conditions.

Among farms with beef cows 66 per cent had all and 13 per cent had part of their cows tied; the remaining 21 per cent kept cows loose in pens. Only a few of these farms had the barn doors open much of the time.

Only five per cent of all surveyed farms had loose housing systems.

Castration, Dehorning and Branding

Castration and dehorning of cattle was usually performed by the farm operators themselves, but sometimes custom hired. Tools and methods used for these operations varied with the age of animals and the preference of the men who did the work. Some animals had to be dehorned or castrated rather at a later than at the usual stage because some feeders from the West—especially Saskatchewan—needed attention after they arrived in Ontario.

Ontario farmers did not brand with hot irons. For cattle identification, some farmers pierced the ears, tagged, or tattooed the animal on a hip with an acid paste. Many operators did not do any branding.

Mortality

Except for losses of purchased feeders during transportation, mortality of mature cattle on Ontario beef farms was less than one per cent. However, death losses among calves born on farms exceeded six per cent. Of all calves lost during the year two per cent were aborted, 31 per cent born dead, and 67 per cent died after birth.

Preventive measures taken by farmers against death, disease, and pests were:

1. a universal practice of dusting and spraying for lice and flies. Many operators also clipped backs, necks, briskets and sides of their cattle before putting them in the stable for wintering.
2. vaccination against brucellosis.
3. immunization against hemorrhagic septicemia which mostly amounted to the treatment of purchased Western calves or yearlings already showing symptoms of the disease. Of all surveyed farms, 33 per cent had some cattle needing attention.

4. occasional vaccination against black leg. Only a small number of farmers followed this practice.

Marketing

A variety of market outlets were available to beef farmers of southwestern Ontario. The interviewed operators reported sales of cattle to Toronto stockyards and to Toronto and Kitchener packing plants, at private and community auction sales, to local drovers and to buyers from packing plants who called at the farm and agreed on a sale price per pound of liveweight before the livestock left the farm. The drover usually offered a lump sum per animal rather than a price per pound. Besides all of the mentioned outlets some sales were made directly to neighboring farmers and to local consumers such as town butchers or people buying beef for home use.

Auction sales, both community and privately-owned, were mainly outlets for selling feeders and stockers. Nevertheless, they were also used for marketing finished cattle. Fall auction sales for feeder cattle held at Wiarton, Keady, and Little Current, Manitoulin Island, were well patronized. At Keady there was a special sale of grass cattle in April, and a special sale of butcher cattle in August. Otherwise the auction sale took place weekly when every kind of livestock could be brought and offered for sale. A veterinary came to every sale to inspect all livestock.

With the exception of packing houses, Ontario beef farmers used the described market facilities not only to sell but also to buy cattle for further feeding and finishing.

Farmers bought some feeders locally from other farmers or through drovers (who often brought carlots of cattle from the west to resell) and Toronto stockyards (the original purchase was made by a Toronto cattle buyer), and, of course, at auction sales where they bought feeder cattle in batches, or individually. The farmer matched cattle, bought individually, into lots of uniform animals. Many considered this practice to be a cheaper way of acquiring batches of homogeneous feeders than purchases in matched lots.

Some Ontario beef farmers bought feeder cattle from western ranchers; they sent their mail orders directly to the known ranchers, or bought through commission men located in the prairie provinces. Occasionally Ontario farmers make trips to the west and buy feeder calves or yearlings at the ranch.

Generally speaking it was easier for Ontario farmers to buy large lots of uniform western rather than of local cattle. One also should keep in mind that a large number of yearlings bought locally were originally brought from the west as calves and then resold to other farmers after about one year of feeding.

FOOD PURCHASES, ST. JOHN'S, NEWFOUNDLAND, 1955

CHARLOTTE I. JOHNSTON AND L. E. DRAYTON

Findings arising from the Dominion Bureau of Statistics study of Urban Family Food Expenditure on quantities of food purchased per person per week in Halifax, Montreal, Toronto, Winnipeg and Vancouver in 1955 are presented in another article in this issue.[1] In April and October, 1955 similar data were obtained from a sample of families in St. John's, Newfoundland.[2] In each of the two survey months the sample was between 50 and 60 families. As in the study for the five mainland cities the sample was restricted to families of two to six persons with a common food budget but the lower limit of the income range accepted in St. John's was $1,000 instead of $2,000, although the upper limit was the same, namely $6,500.

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[1] Johnston, Charlotte I. *Quantities of Food Purchased in Urban Areas*, 1955.

[2] Expenditure details are reported in *Urban Family Food Expenditure*, 1955. Dominion Bureau of Statistics. Reference Paper No. 76. Ottawa, 1957.

The St. John's sample differed greatly from that obtained in the other five cities in both average family size and average family income. The average family size in St. John's was close to four persons compared with about three in the mainland cities. Adults, 16 years of age and over, made up 68 per cent of the families of the mainland cities and 62 per cent of the St. John's families. On the other hand, children aged five to fifteen years represented only 17 per cent of the survey population of the five cities whereas that age group formed 24 per cent of the survey population in St. John's. The average family income was $3,372 in St. John's and $4,061 in the mainland cities. In both instances the samples were representative of normal or common family types rather than of the entire population of the cities concerned.

Total Food Expenditure.—Low income families usually spend less on food than high income families. Large families, especially those with small children, can usually manage with somewhat lower food expenditure per person than small families. For one thing there is often some economy in buying food in large units. Also, it is probably easier to keep waste to a minimum when cooking for several individuals than when cooking for only two or three.

For these reasons it might be expected that food expenditure per person per week by the St. John's families would be lower than by the families in the five mainland cities. Actually it was not (Table 1). The St. John's families spent considerably less on food eaten away from home but spent more than families in other cities on food eaten at home. Considering their lower average income this means that a greater proportion of their income was spent on food. It does not mean, nevertheless, that the St. John's families bought even as much food per person as those in the mainland cities since prices were much higher in St. John's. High prices were augmented by the tax on food which amounted to 2.5 per cent of the total cost recorded. Only a few widely used products, mainly fresh and preserved milk, salt beef and pork, and flour, are exempt from the tax, as are candy, soda fountain drinks and meals.

Table 1.—Expenditure Per Person Per Week on Food by Food Class, April and October, 1955, Five Mainland Cities and St. John's Newfoundland (a)

Food class	Five mainland cities			St. John's April and October (b)
	Whole year	April	October	
	— dollars per person per week —			
Dairy products	.73	.72	.71	.57
Eggs	.25	.23	.32	.33
Bakery and cereal products	.68	.71	.68	.70
Meat. poultry and fish	1.73	1.70	1.98	1.94
Fats and oils	.36	.37	.40	.34
Fruits and vegetables	1.07	1.13	1.00	1.40
Other foods	.97	1.02	.98	1.05
Total eaten at home	5.79	5.88	6.07	6.33
Food eaten away from home	.62	.62	.53	.20
Total food expenditure (c)	6.38	6.45	6.60	6.49

(a) Based on tables in *Urban Family Food Expenditure*, 1955. Reference Paper No. 76. Dominion Bureau of Statistics. Ottawa, 1957.

(b) Including tax.

(c) Discrepancies in this total arise from inclusion of family members boarding out of town in number of persons used for this total. These were excluded in estimating expenditure per person on food eaten at home.

Quantities Purchased.—Because of the small sample collected in St. John's, the limitation of data to two months and the fact that the average family purchases many food items only occasionally rather than on a regular weekly basis, no attempt is made here to present any detailed analysis of the quantity purchased in St. John's of each food item listed in the survey questionnaire.[1] Expenditure data are presented only for major food classes, with some discussion of the larger differences arising in quantities consumed.

The classes used for this analysis are those of the Dominion Bureau of Statistics report. This classification is fairly logical for consideration of both the marketing and the nutritional aspects of food consumption. Three of the major food classes used, dairy products, eggs, and meat, poultry and fish, are animal protein products. The foods included within these three classes are good substitutes for each other so far as quality of protein is concerned. Bakery and cereal products as a class include most of the foods derived from cereal grains. The fats and oils class combines butter with its closest subtitutes. The "other foods" class is rather broad in that it includes sugar and related foods, beverages, frozen foods, and many canned or prepared foods composed of a variety of ingredients.

Dairy Products.—Dairy products, other than butter, accounted for nine per cent of the food budget in St. John's compared with about 12 per cent in the mainland cities (Table 2). This lower proportion of food expenditure was associated with a lower cost per person per week in St. John's.

Table 2.—Distribution Among Food Classes of Expenditure on FoodEaten at Home, Five Mainland Cities and St. John's, Newfoundland, April and October, 1955 (a)

Food class	Five mainland cities		St. John's Newfoundland
	April	October	April and October
	— per cent —		
Dairy products	12.2	11.7	9.0
Eggs	3.9	5.3	5.1
Bakery and cereal products	12.1	11.2	11.0
Meat, poultry and fish	28.9	32.6	30.6
Fats and oils	6.3	6.6	5.4
Fruits and vegetables	19.2	16.5	22.2
Other foods	17.4	16.1	16.7
Total	100.0	100.0	100.0

(a) Based on tables in *Urban Family Food Expenditure*, 1955. Reference Paper No. 76. Dominion Bureau of Statistics. Ottawa, 1957.

The main reason for the difference in cost was the much smaller quantity of fresh milk purchased per person in St. John's where the reported purchases were one pint per week compared with almost 4.5 pints in the five mainland cities. Since fluid milk cost 32 cents per quart in St. John's during 1955 compared with an average of 21 cents per quart in the other survey cities, much of the difference in consumption rate may have been caused by the difference in price.

The deficiency in fresh fluid milk in St. John's was compensated for, in part, by a greater use of canned and powdered milk, of which the recorded weight purchased per person was over six times that of the other cities. The records obtained did not distinguish between various concentrated milk products. However, since the price per pound of evaporated milk is much lower than that of the other types of milk used in the household, and since the price per pound paid in St. John's for all the purchased "canned and powdered milk" group was little more than that of evaporated milk, nearly all of the "canned and powdered milk purchased was evaporated milk". It would seem that not much more than the equivalent of a quart was added to the weekly consumption per person of fresh milk by the canned and powdered milk, leaving the level of consumption in St. John's well under three-fourths of that of the mainland cities. In view of the relatively high proportion in St. John's of children aged five to fifteen years, milk requirements per person were, however, greater than those of any other city.

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[1] Detailed comparisons of quantities reported consumed in St. John's with the average of those of the five mainland cities and with Halifax have been computed and can be supplied on request.

The price of fresh milk in St. John's, 32 cents a quart, probably deters many families with incomes in the survey range from buying more of it. On the other hand, increased use of evaporated milk at about 20 cents a quart of reconstituted whole milk, and of powdered skim milk at an even lower price, might well be encouraged.

Other dairy products include buttermilk, chocolate milk, cream, ice cream and the various types of cheese. In St. John's the consumption of the first two items by the reporting families was negligible. The consumption rates of the other products were between 50 and 75 per cent of the average rates in the five mainland cities. It is rather remarkable that cream, usually canned, was bought by as high a proportion of the St. John's families as bought fresh milk, and by a higher proportion than bought cream in the other survey cities. Although the consumption rate of cheese as a whole was lower in St. John's, as much per person was bought of bulk cheese as elsewhere.

Eggs.—The people of St. John's were spending as much on eggs per person per week in April and October 1955 as other Canadians spent in October and considerably more than they did in April; yet they bought only 81 per cent of the quantity bought per person in the other five cities.

Meats, Poultry and Fish.—Total expenditure per person on meat, poultry and fish differed little in St. John's from that in the other cities. The quantities bought per person of total meat and poultry also differed little but the people of St. John's purchased three times as much fresh and cured, and more frozen fish on the average than did those of the mainland cities. Thus the average St. John's diet compared favorably with that of the other survey cities in its supply of animal protein derived from meat, poultry and fish.

However, the survey families of St. John's differed from those of the other cities in their choice of meat. Pork and veal were less popular but canned and cooked meat and sausages seemed to find a better market in St. John's than in the other cities. About one-third of a pound of "other" beef, most of which was salted, was bought per person per week in St. John's, whereas almost none of that type of beef was purchased in the other cities except Halifax.

Bakery and Cereal Products.—The expenditures on bakery and cereal products together were very similar in St. John's and the other cities. Nevertheless, there was a noticeable difference in purchase patterns. The people of St. John's seemed to rely less on prepared foods. They bought much more flour, cake mixes and breakfast cereals to be cooked but somewhat less per person of most other bakery and cereal products than did the people of the other five cities. The total weight of such products reported per person in St. John's was over 10 per cent greater than in the other cities.

Although so much flour was bought in St. John's the bread eaten was by no means all home-baked. Nearly 90 per cent of the families bought some bread in the two-weeks survey period, and the quantity bought per person was 80 per cent of that purchased in the other cities.

An average of 4.25 pounds of flour was bought per family per week in St. John's, yet over 70 per cent of the purchases recorded were in seven-pound units. Evidently the few cents gained and the convenience of having a supply on hand by buying flour in large quantities were outweighed by other factors.

Fats and Oils.—The St. John's families spent less on fats and oils than did those in the other cities. The main reason for this was that they ate margarine instead of butter. They used six times as much margarine per person as the mainland families but only three-tenths as much butter. The aggregate retail weight of butter, margarine, lard and vegetable shortening purchased per person in St. John's was 0.9 pound compared with 0.7 pound in the other cities. Indeed the purchases of margarine in St. John's almost equalled the combined purchases of these four fats in the other cities.

Fruits and Vegetables.—The St. John's families used a much larger percentage of their food budget for the purchase of fruits and vegetables than did families in the other cities. They also spent considerably more money on these foods.

Because of the large variety of fruits and vegetables and the various forms in which they are sold, appraisal of the quantity data is difficult. Four fresh fruits were generally available and purchased in substantial quantities in both April and October. These were apples, bananas, grapefruit and oranges. The St. John's families reported purchase rates of the two citrus fruits 20 per cent higher than those prevailing in the other cities. On the other hand, they bought less than half as many bananas per person.

The quantity of fresh apples reported per person was higher in April but much lower in October than that in the other cities. Reported October purchases in the other cities were 2.5 times as great as April purchases but in St. John's purchase rates for the two months were very similar. The price per pound for apples in October averaged 15 cents in St. John's compared with seven cents in the other cities. By April this price difference had narrowed to 19 cents per pound in St. John's compared with 14 in the mainland cities.

As to fresh vegetables, the St. John's families reported the purchase of over three times as much cabbage per person as did families in the mainland cities. They also had relatively high purchase rates of potatoes and carrots. However, their purchase rates of beans, celery, lettuce, spinach and cauliflower were only half or less of the average for the other cities. Purchases per person of fresh onions and tomatoes in St. John's were near average.

Despite the large quantities of potatoes bought it was apparently the custom for most families in St. John's to buy them at least every two weeks.

At 24 cents per person per week the expenditure on canned and dried fruits in St. John's was 60 per cent higher than in the mainland cities[1].

It should be remembered however that St. John's prices were much higher than those in the other cities. The price of choice canned peaches, for instance, was 25 per cent higher than the average price in the mainland cities. Nevertheless, the big difference in expenditure would suggest that St. John's probably had the higher consumption rate for most items in this category. There was at least one exception to this, namely, canned apple juice. Apparently, the market for canned apple juice has not been fully developed in St. John's.

As to canned and dried vegetables, the level of consumption for pulses in St. John's was especially high. The St. John's families reported the purchase of 4.5 fluid ounces of canned baked beans per person per week, 2.5 times as much as was reported by families in the five mainland cities. The purchase rate reported for dried vegetables, consisting mainly of white beans and split peas, was seven times as high in St. John's as in the other cities. The purchase rates of canned corn, tomatoes and tomato juice were relatively low but that of peas was high in St. John's.

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[1] Preliminary results of a Dominion Bureau of Statistics survey conducted in 1957 show that this difference was then only 30 per cent.

Although part of the high expenditure on fruits and vegetables in St. John's may have resulted from high prices, the proportion of the food budget spent on these products indicated that they were liked and given some priority. As a result, the fruit and vegetable content of the diet did not compare unfavorably with that in the other cities.

Other Foods.—At about one dollar per person per week expenditure on other foods was near the five-city average. Nevertheless, there were a few items included in this broad category which the St. John's families consumed at rates below half those prevailing in the mainland cities. These items were frozen vegetables, frozen fruits and juices, coffee and soft drinks. The low consumption rates of frozen fruits and vegetables in St. John's has little significance with respect to comparative nutrition as even in the other cities the consumption rates for each of these two food classes was only one ounce per person per week. Thus, St. John's in 1955 was scarcely touched as a market for frozen fruits and vegetables.

Tea and sugar were two grocery items which the St. John's families consumed at fairly high rates.

The Total Diet.—From the foregoing analysis it seems that the general diet of families in St. John's compared satisfactorily with that of families in other Canadian cities. There were many differences of detail which were probably caused by price structure and habit. The effect of the low level of fresh fluid milk consumption on the nutritive value of the diet was only partially offset by the large quantity of concentrated milk products used. The data indicate that the intakes of other animal protein foods and of the protective fruits and vegetables were about as adequate in St. John's as in the other survey cities. The consumption rate of energy foods (cereal products, fat and oils, sugar) seemed to be somewhat higher than in other Canadian cities, probably a desirable situation if one considers the differences in food requirements dictated by climate and types of activity.

PUBLICATIONS OF THE ECONOMICS DIVISION

Federal Agricultural Legislation in Canada—1958 Supplement. Ottawa, February 1959. pp. ii + 97-106.

A summary of agricultural legislation, passed by the Parliament of Canada, at the first session of the 23rd Parliament (October 14, 1957-February 1, 1958) and the first session of the 24th Parliament (May 12-September 6, 1958). This summary is the third supplement to *Federal Agricultural Legislation in Canada, 1954.*

Consumer Preferences for Apples in Greater Montreal. Choquette, R. and L. E. Drayton. (Prepared for the Quebec Agricultural Marketing Board). Ottawa, April 1959. pp. 54.

A study concerned with the maintenance and improvement of the Montreal market for Quebec apple producers. It was especially designed to secure information on the types of families which are heavy consumers and those which are light consumers of apples; the places where consumers choose to buy their apples, their packaging preferences; the satisfactory quality of purchased apples, from the viewpoint of the consumers; the consumers' concern about grading standards; the types of families which use processed apple products; and ways of increasing the consumption of processed apple products.

The report itself is organized into three main parts: *Fresh Apples; Uses of Apples;* and *Processed Apple Products.* The 18 pages of text are followed by 27 pages of Tabulations of the Consumer Survey, and a copy of the Questionnaire Used by Enumerators.

Provincial Agricultural Legislation in the Atlantic Provinces—1958 Supplement. Fleming, David. Ottawa, May 1959. pp. 65-78.

This supplement to *Provincial Agricultural Legislation in the Atlantic Provinces* brings up to date the summaries of agricultural statutes contained in that bulletin; it outlines the nature of the amendments and the new legislation passed in 1957 and in the first half of 1958.

Provincial Agricultural Legislation in Quebec and Ontario, 1957-1958 supplement. Ottawa, May 1959. pp. ii + 69-80.

The second supplement to *Provincial Agricultural Legislation in Quebec and Ontario,* 1955.

Provincial Agricultural Legislation in Western Canada, 1957-1958 supplement. Ottawa, May 1959. pp. ii + 125-138.

The second supplement to *Provincial Agricultural Legislation in Western Canada,* 1955.

OTHER PUBLICATIONS

Keeping the Farm in the Family. Gilson, J. C. Reprinted from *The Country Guide.* Winnipeg, Manitoba. 1959. pp. 24.

Dr. Gilson, associate professor of agricultural economics at the University of Manitoba, conducted a study of 30 farm families during the summer of 1958. He used the results of this study in a series of four articles on problems relating to the continuity of ownership of the family farm. These articles, published in *The Country Guide,* dealt specifically with: *Continuity of Ownership; The Father-Son Team; Who Gets the Family Farm;* and *Planning the Family Farm Estate.*

The Case for Co-operatives—Brief of the Co-operative Union of Canada to The Royal Commission on Price Spreads of Food Products. Ottawa 1959, pp. 30.

This brief defines co-operative enterprise, reviews the differences between co-operative and other types of business, describes the purchasing and marketing activities in Canada, the relations between co-operatives and marketing boards and the success of recently-established co-operative food stores. It also presents a brief review of co-operative activities in other countries and then goes on to discuss co-operative principles and objectives and the impact of co-operatives on the economy under the following section headings; *Basic Assumptions; Marketing Co-operatives; Producers and Consumers; Purchasing Co-operatives;* and *Education and Self-Discipline in Co-operation.*

The Recent History of Land-Use.—Wibberley, G. P. Reprint No. 126, New Series. Wye College, University of London, Ashford, Kent. pp. 13. (Reprinted from *The Biological Productivity of Britain,* published by the Institute of Biology, 41 Queen's Gate, London, S.W. 7, in 1958).

A description of the changes in major land uses in England and Wales since 1900 and an analysis of their impact on society.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION
J. F. BOOTH, Director

OCTOBER 1959 Vol. XXIX No. 5

CONTENTS

Page

The Economic Situation 99

Red Meat Consumption in Canada . . . . *L. E. Drayton* 101

Changes in Agricultural Production in the Maritime and Central Regions of Canada, 1941-1956 . . . *C. Varkaris* 108

Land Values in Manitoba, 1958 . . . . *L. E. Sparling* 112

Publications of the Economics Division 118

United Nations Publications 119

Other Publications 120

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Published by Authority of the Honourable Douglas S Harkness
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS

Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
				1935-39=100				1949=100		1949=100
1913..........	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914..........	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915..........	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916..........	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917..........	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918..........	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919..........	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920..........	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921..........	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922..........	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923..........	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924..........	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925..........	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926..........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927..........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928..........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929..........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930..........	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931..........	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932..........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933..........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934..........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935..........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936..........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937..........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938..........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939..........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940..........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941..........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942..........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943..........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944..........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945..........	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946..........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947..........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948..........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949..........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950..........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951..........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952..........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953..........	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954..........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955..........	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956..........	225.6	214.2	181.6	246.9	234.5	247.6	208.8	118.1	113.4	154.9
1957..........	227.4	210.8	163.6	258.0	231.0	255.8	211.3	121.9	118.6	155.1
1958..........	....	....	....	....	....	259.9	213.0	125.1	122·1	151.7
1958										
Oct..........	226.9	211.8	154.4	269.3	236.4	....	....	126.0	123.4	152.2
Nov..........	228.5	212.1	155.2	269.1	235.5	....	....	126.3	123.2	155.1
Dec..........	229.1	217.6	156.5	278.7	238.0	....	....	126.2	122.2	156.8
1959										
Jan..........	229.7	217.7	156.6	278.7	241.4	258.8	218.2	126.1	122.3	159.5
Feb..........	230.8	214.8	155.6	274.0	239.3	....	....	125.7	121.2	162.0
Mar..........	230.8	212.4	155.4	269.5	236.9	....	....	125.5	120.0	161.2
April..........	231.2	213.7	156.4	271.0	236.3	271.4	220.3	125.4	119.3	165.4
May..........	231.2	218.8	166.5	271.0	238.5	....	....	125.6	118.5	164.7
June..........	230.7	221.9	173.1	270.6	239.6	....	....	125.9	119.1	164.1
July..........	231.0	222.7	172.6	272.8	242.2	....	....	125.9	119.2	....
Aug..........	230.8	....	....	....	....	....	....	126.4	120.5	....
Sept..........	....	....	....	....	....	....	....	....	....	....

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1956—July 1957 include final barley and wheat payments announced June 11, 1958.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rat es and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

THE ECONOMIC SITUATION

External Trade.—Canada's commodity imports continued to increase in July 1959, the tenth month for which increases over the corresponding month of the previous year have been recorded.

Imports from all countries were estimated at $494.9 million, compared with $431.7 million in July 1958. Total exports rose to $433.7 million from $421.6 million in July 1958. Imports exceeded exports by $61.2 million in July 1959 and $10 million in July 1958.

For the seven months ending July, imports totaled $3,310.2 million in 1959 and $3001.7 million in 1958 and exports totaled $2,850.4 million in 1959 and $2,803 million in 1958. Imports exceeded exports by $459.8 million in January-July 1959 and by $198.7 million in the corresponding period in 1959.

July imports from the United Ssates rose to $334.7 million in 1959 from $286.8 million in 1958. Exports rose to $285.3 million from $249.6 million. The import balance increased to $49.4 million from $37.2 million. In the January-July period imports from the United States rose to $2,299.8 million from $2,103.5 million and exports to $1,792.2 million from $1,618.5 million. The import balance increased to $507.6 million from $485 million.

Imports from the United Kingdom were valued at $52.5 million in July 1959 and $48.2 million in July 1958. Exports were valued at $52.9 million in July 1959 and $74.1 million in July last year. The export balance was reduced to only $400,000 from $25.9 million in July last year. In the January-July period imports rose to $336.4 million from $314.8 million and exports to $418.4 million from $443.8 million; the export balance was reduced to $82 million from $129 million.

Industrial Production.—Canada's seasonally adjusted index of industrial production declined to 164.1 in June from 164.7 in May. The following figures depict the changes in the index of industrial production (1949=100) during the January-June period of 1959.

	Total industrial production	Total mining	Manufacturing			Total electric power and gas utilities
			Total	Non-durables	Durables	
January	159.5	240.9	143.8	144.2	143.4	258.5
February	162.0	249.4	145.8	145.0	146.7	260.0
March	161.2	249.1	144.8	144.0	145.7	260.3
April	165.4	250.5	149.1	148.9	149.4	266.8
May	164.7	253.7	148.2	149.0	147.1	265.1
June	164.1	250.6	147.3	145.9	149.0	272.0

Labor.—Canada's paid workers realized about $1,528.1 million in salaries, wages and supplementary labor income in June 1959, compared with $1,483.8 in May 1959 and $1,407.1 million in June 1958. Amounts received in the January-June period totaled $8,609.2 million in 1959 and $7,968.4 million in 1958.

Canada's industrial composite employment index (1949=100) rose to 123.3 in June from 119.6 in May 1959, the largest gain between two months in recent years. The index stood at 121.3 in June 1958. Weekly wages and salaries averaged $73.71 in the last pay period in June 1959 compared with $73.82 in May and $70.70 in June 1958.

Consumer Price Index.—Canada's consumer price index (1949=100) rose to 126.4 in August from 125.9 in July and 125.2 in August 1958. The previous peak, 126.3, was recorded in November 1958.

The food index increased seasonally from 119.2 to 120.5. Higher prices were reported for eggs, oranges, lettuce, beef and pork, and lower prices for most fresh vegetables, particularly potatoes and tomatoes.

Wholesale Prices.—Canada's general wholesale price index (1935-39=100) rose to 231.0 in July from 230.7 in June 1959 and 227.3 in July 1958. The animal products group index recorded the biggest rise from June to July 1959, moving to 257.1 from 252.6 in June. Higher prices were recorded for hides and skins, lard and tallow, eggs, fresh meat, livestock, and leather. The non-metallic minerals group index rose to 186.0 from 185.3; prices were higher for cement, coal and coke.

The non-ferrous metals group index dropped to 172.8 from 174.8, mainly because of lower prices for copper and its products, and tin. The vegetable products group index dropped to 199.0 from 200.0; prices were lower for fresh fruit, vegetable oils and products, tea, coffee, cocoa, and raw sugar.

Prices of Agricultural Products.—Canada's index of farm prices of agricultural products (1935-39=100) rose to 242.2 in July from 239.6 in June and the low point, for the first seven months of 1959, of 236.3 in April. The June-July gain is attributable mainly to higher prices for livestock and potatoes.

Retail Sales.—Retail sales in Canada totaled about $1,383.9 million in June 1959, close to an eight per cent increase from the $1,283.1 million total in June 1958. January-June sales rose to $7,666.4 million in 1959 from $7,270.6 million in 1958.

Farm Implements and Equipment.—Sales of farm implements and equipment, including repair parts, were valued at $104.9 million, wholesale, in the first half of 1959, a sharp increase from the $81.6 million for the first six months of 1958. All provinces reported larger sales.

Farm Cash Income.—Canadian farmers realized a record $1,318.6 million from the sale of farm products and participation payments on previous years' grain crops in the first six months of 1959, a three per cent increase over the $1,279.6 million total for 1958. Higher returns from flaxseed, tobacco, barley, hogs, poultry meat and dairy products, and larger Canadian Wheat Board payments more than offset lower returns from the sales of wheat, potatoes and cattle.

Farm cash income was higher than a year earlier in all provinces except Prince Edward Island, New Brunswick and Saskatchewan. Gains ranged from less than one per cent in Quebec to almost nine per cent in Alberta and decreases from less than one per cent in Saskatchewan to 11 per cent in New Brunswick.

Income from the sale of field crops was estimated at $467.8 million, compared with $454 million in the first half of 1958. Increased returns from sales of flaxseed, tobacco and barley, larger Canadian Wheat Board payments, and reduced repayments of cash advances on farm-stored grain were the main contributors to the gains in income. These gains were partly offset by lower returns from sales of wheat and potatoes.

Cash income from the sale of livestock and livestock products was estimated at $828 million, compared with $801.3 million for the first six months of 1958. Returns were greater for all items included in this group except cattle and calves. Lower marketings of cattle and calves more than offset higher average prices.

Crops.—According to the Dominion Bureau of Statistics first official forecasts for 1959, the production of all wheat, oats, all rye and tame hay will exceed that of 1958 but the output of barley, mixed grains, flaxseed, rapeseed, mustard seed and potatoes will be lower.

RED MEAT CONSUMPTION IN CANADA

L. E. Drayton

Before World War II Canadians were eating less than 1.5 billion pounds of red meat a year (Table 1). Today their consumption is approaching 2.5 billion pounds a year; by 1960 it may well exceed this level. The 1935 figure of 1.25 billion pounds will then have about doubled in a 25-year period.

Most of this spectacular increase stemmed from the growth of the Canadian population. Per capita consumption reached a peak of 152.7 pounds in 1944 but this peak has not been closely approached since then. Indeed, a sharp decline occurred in the late 1940's (Table 2). Still, with higher income levels the rate of consumption remained considerably above that prevailing during the late 1930's. Following the outbreak of foot-and-mouth disease in 1952 the prices of meat declined sharply. Consumers responded by buying more meat and in recent years red meat consumption has been about 140 pounds per person a year.

Table 1.—Consumption of Red Meats in Canada, 1935-58

Year	Beef	Veal	Pork	Lamb and mutton	Offal	Canned meats	All meats
	—million pounds per year—						
1935–39	605.9	116.0	440.3	61.8	62.8	15.9	1,301.9
1940–44	678.1	124.8	628.3	48.2	69.9	21.7	1,571.0
1945–49	786.4	133.4	627.8	46.1	66.0	40.9	1,700.6
1950–54	841.9	117.3	760.0	32.5	71.3	65.7	1,888.7
1955	1,085.4	132.3	772.2	40.7	83.0	71.3	2,184.9
1956	1,157.9	137.7	795.8	41.1	84.9	85.9	2,303.3
1957	1,240.3	150.1	766.9	44.2	87.0	86.1	2,374.6
1958	1,104.7	150.0	883.1	46.0	81.8	88.7	2,354.3

Table 2.—Consumption of Red Meats per Person in Canada, 1935-58

Year	Beef	Veal	Pork	Lamb and mutton	Offal	Canned meats	All meats
	—pounds per year—						
1935–39	54.7	10.5	39.9	5.6	5.7	1.4	117.8
1940–44	60.5	11.1	56.0	4.3	6.2	1.9	140.0
1945–49	63.3	10.7	50.3	3.7	5.3	3.3	136.6
1950–54	57.9	8.1	52.7	2.3	4.9	5.3	131.2
1955	69.1	8.4	49.7	2.6	5.3	4.2	138.8
1956	72.0	8.6	49.5	2.6	5.3	4.9	142.9
1957	74.8	9.0	46.2	2.7	5.2	4.6	142.5
1958	64.8	8.8	51.8	2.7	4.8	5.2	138.1

If the years of peak meat consumption during World War II, 1942-1945 inclusive, are omitted a trend line which fits the data on total meat consumption per person reasonably well may be computed (Figure 1). This trend line indicates that meat consumption per person in Canada has been increasing about one pound a year during the last 25 years. Over two-thirds of the annual variation in meat consumption is associated with this trend.

The good fit of this trend line during peace-time years probably arises from special circumstances of the period covered rather than any gradual basic change in the desire of the Canadian population to eat red meats.

Unemployment was widespread in Canada during the 1930's. Many urban families could afford little, if any, meat even at prevailing low prices. Data on red meat consumption in Canada before 1935 are not available but, in all likelihood, the consumption rate was much higher throughout the 1920's than during the following decade.

Since 1940 there has been little unemployment. Moreover, unemployment insurance has prevented complete cessation of income for many of those who have been unemployed. Average incomes have risen rapidly. In 1935-39 per capita disposable income was only $339 compared with $1,338 in 1958. Even though the general price level had doubled this represented a very substantial increase in real income. Consequently, it is quite possible that the apparent trend in red meat consumption per person since 1935 is fully accounted for by the effects of improved income distribution and increasing real income. Annual

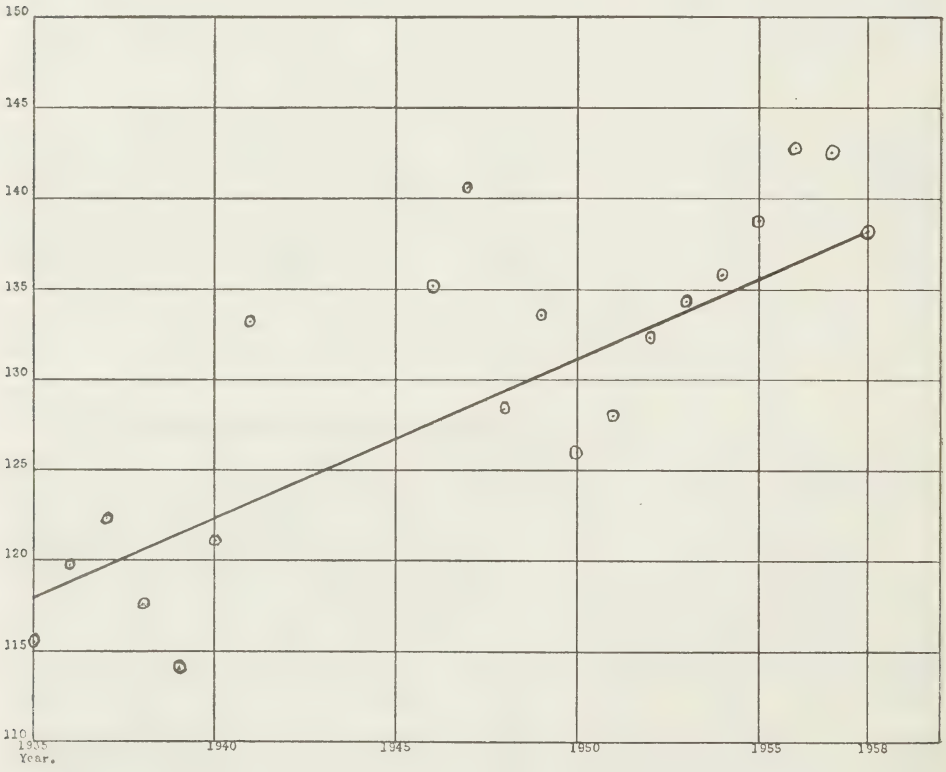

Figure 1. Trend in Meat Consumption 1935-1958.

Pounds per person

fluctuations in supplies and prices may well account for most of the deviations from this general trend in peace-time years.

Comparative Consumption of Various Meats.—Beef and pork are by far the most important red meats in Canada (Table 3). Lamb and mutton play a relatively insignificant role in the Canadian diet. This low consumption of lamb and mutton is probably associated with the small size of the Canadian sheep industry. Nevertheless, there is considerable evidence that Canadians generally prefer beef and pork to lamb. Imported lamb is often offered at prices similar to or even lower than those of beef and pork. If such offers stimulated heavy retail buying, imports would probably become much greater unless domestic production increased to meet the demand.

A survey conducted in 1936 revealed that many people did not like lamb[1]. In reporting on this survey Johnston and Hopper concluded that one reason why so many people disliked lamb was that they did not know how to buy and cook lamb. If that was true 20 years ago it may be even more so today when lamb and mutton account for less than two per cent of total meat consumption.

Table 3.—Percentage Distribution of Canadian Meat Consumption by Kinds of Meat, 1935-58

Year	Beef	Veal	Pork	Lamb and mutton	Offal	Canned meats	All meats
			—per cent of all meats—				
1935–39	46.5	8.9	33.8	4.8	4.8	1.2	100.0
1940–44	43.2	8.0	39.9	3.0	4.5	1.4	100.0
1945–49	46.3	7.8	36.9	2.7	3.9	2.4	100.0
1950–54	44.2	6.2	40.6	1.7	3.8	3.5	100.0
1955	49.7	6.1	35.3	1.9	3.8	3.2	100.0
1956	50.2	5.9	34.5	1.7	3.6	3.7	100.0
1957	52.2	6.3	32.3	1.9	3.7	3.6	100.0
1958	46.9	6.4	37.5	1.9	3.5	3.8	100.0

Veal is more important than lamb in the Canadian dietary pattern but has never exceeded 10 per cent of total red meat consumption. When it is realized that veal is derived primarily from the slaughter of dairy calves not required for breeding purposes it becomes apparent that supplies of veal are quite limited relative to those of other meats. Thus, the fact that veal consumption in Canada has never exceeded 12 pounds per person and has even declined in recent years to less than nine pounds may have very little relevance as an indicator of meat preferences.

Similar considerations apply to offal. The supply is generally limited by the quantity of livestock slaughtered. Exports and imports are usually small by comparison with domestic consumption. When large quantities of meat are exported the domestic supply of offal tends to increase relatively to that of other meat. This may account for the decline in the share of the Canadian meat market which was filled with offal after the loss of the British market for bacon, about 1948. We are eating over three times as much canned meats per person today as we did in the 1930's. This is part of the much publicized trend to buy more service with foods. However, it is unlikely that canned meats will account for more than five per cent of our meat consumption within the next decade if good quality fresh meat is abundant and sells at prices judged reasonable by the consumers.

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[1] Johnston, Charlotte I. and W. C. Hopper, *Consumption of Lamb in City Households.* Economics Division, Canada Department of Agriculture, 1942.

Pork products have comprised from 32 to 46 per cent of the meat consumed in Canada. During the 23-year period 1935 to 1957 no consistent trend developed in per capita consumption of pork. Consumption was at record levels in 1942 and 1943. Exclusive of the World War II period, the peak year for pork consumption was 1951 when we consumed much more pork than beef. From 1951 to 1957 pork consumption per person in Canada showed a rather sharp downward trend, having declined over 12 pounds per person. This is probably a temporary phenomenon as pork consumption per person increased in 1958 and may reach the 1951 level in 1959.

Beef would seem to be definitely the favorite meat of Canadians. Under normal conditions beef probably fills from 45 to 50 per cent of our meat requirements. In a few years such as 1946, 1954 and 1957 over half of the meat consumed was beef. At the other extreme, in 1951, only 39 per cent of our meat was beef.

Competition between Beef and Pork.—Relative prices have a marked effect on the consumption of beef and pork. Woolam demonstrated in 1953 that the ratio of annual domestic consumption of beef to pork was inversely correlated to the prices of these meats.[1] In years when the weighted average prices [2] of beef and pork at Toronto were equal Canadians consumed slightly more beef than pork. When the wholesale price of beef was 31 per cent below that of pork the consumption of beef was 150 per cent of that of pork.

A shift in preferences between beef and pork occurred during the last quarter century. The nature of this shift can be recognized from a study of Figure 2. The vertical axis of this figure shows beef steak prices as a percentage of loin chop prices and the horizontal axis Canadian consumption of beef expressed as a percentage of the Canadian consumption of pork. Both axes are drawn on logarithmic scales. Each O symbol represents the relation between steak prices expressed as a percentage of pork loin chop prices and beef consumption expressed as a percentage of pork consumption in one of the years, 1935 to 1944 inclusive. The symbol ⊗ is used for the years 1945 to 1949 and the symbol X for the years 1950 to 1958 inclusive. The lower line is a computed line of best fit to the data of the 1935-44 period and the upper line to the data of the 1950-58 period. One can readily observe that the symbol O falls on both sides of the lower line and is always closer to it than to the upper line. A similar relation exists between the symbol X and the upper line. As to the symbol ⊗ it falls between the two lines in four out of five years. These five years seem to represent a transition period between the consumer preference patterns prevailing during the other two periods.

The two lines have a slope of about —0.6. Because of the use of logarithmic scales in these charts this slope indicates that a 10 per cent increase in beef prices with pork prices remaining constant results in a six per cent decrease in beef consumption relative to pork consumption. This general relationship existed in both periods. However, the line representing the consumption pattern for the later period is above and to the right of the line for the earlier period. This

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[1] Woolam, G. E., *The Influence of Prices on the Relative Consumption of Beef and Pork*, Economics Division, Canada Department of Agriculture, June 1953.

[2] The production year for both meats was October 1 to September 30. Monthly prices were weighted on the basis of monthly domestic disappearance from inspected slaughter. The consumption data refer to disappearance from inspected slaughter and not to total consumption.

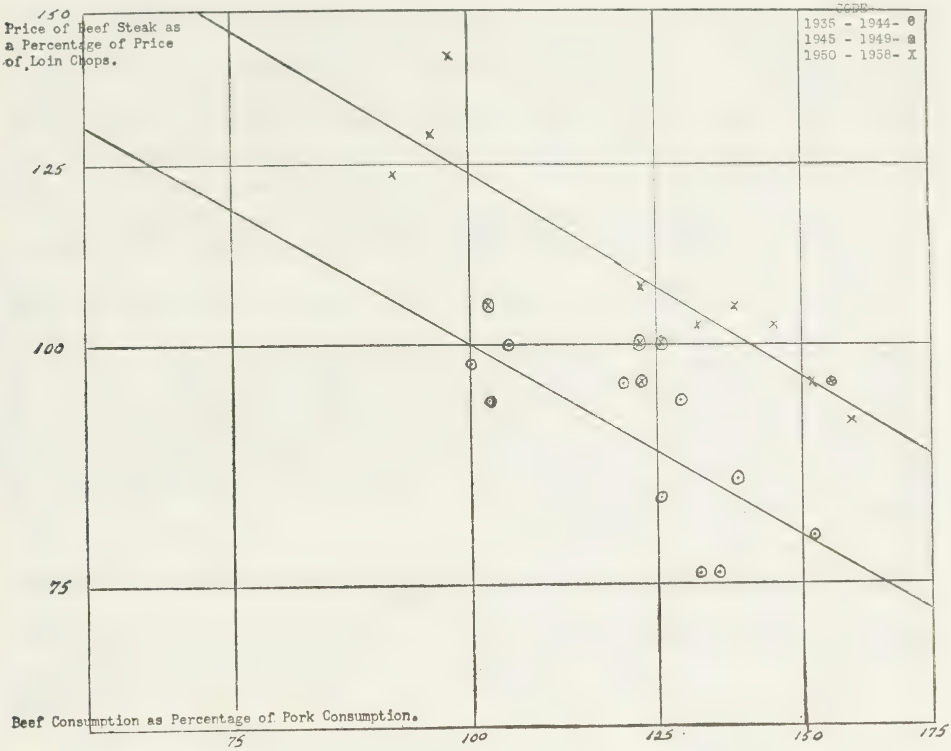

Figure 2. Relation between Beef Steak Prices expressed as a Percentage of Pork Loin Prices and Beef Consumption expressed as a Percentage of Pork Consumption.

signifies that a given price relationship between beef and pork led to a greater consumption of beef relative to pork during the 1950-58 period than during the 1935-44 period. For example, equal prices for the specified cuts led to virtually equal consumption of the two meats during the 1935-44 period. During the 1950-58 period equal prices led to 40 per cent more beef than pork being consumed.[1]

Some plausible reasons may be offered for this apparent shift in consumer preferences. The increase in real income per family may have something to do with it. The locker plant and the home freezer make it easier to hold home produced beef for summer use in rural areas and may be important contributors to the changes in preferences. Increasing objection to fat in meat may be another relevant consideration [2].

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[1] Some writers have noted a somewhat similar but differently-timed shift from the use of pork to that of beef in the United States. A comprehensive review of American research in this and related fields is contained in: Beik, Leland L., *Consumer Demand for Meat*, Pennsylvania State University, University Park, Pa., 1959.

[2] For recent research data on consumer attitudes to fat in bacon and beef see the following articles in *The Economic Annalist*:

a) Johnston, Charlotte I., *Consumers' Opinions of Side Bacon.* (October 1954).
b) Johnston, Charlotte I., *Consumer Acceptance of Grade A Lean Bacon in Montreal, Edmonton and Toronto.* (April 1958).
c) Drayton, L. E., *Consumer Choices Among Beef Roasts and Steaks Based on Visual Inspections.* (August 1958).

Regional Variations.—Our data on regional variations in meat consumption are quite limited but nevertheless suffice to indicate substantial differences in meat consumption in various parts of the country. According to studies of diets of rural families, in the Maritime Provinces, in 1945-46, the level of meat consumption in rural homes was considerably below the Canadian average [1]. In the three provinces studied estimated meat consumption per person in farm households ranged from 63 per cent of the Canadian average in New Brunswick to 77 per cent in Prince Edward Island. Nevertheless, the reported beef consumption in Nova Scotia and Prince Edward Island was close to the Canadian average.

The Dominion Bureau of Statistics urban expenditure studies provided data on food purchases by families of 2-6 persons with incomes ranging from $2,000 to $6,500 in the cities of Halifax, Montreal, Toronto, Winnipeg and Vancouver. They revealed considerable variations in meat consumption, among the five cities. Expenditure per person per week on meat in 1953 varied from less than $1.20 in Winnipeg to almost $1.90 in Montreal (Table 4). In 1955 Halifax was the low city with an expenditure of 98 cents per person per week as compared with $1.60 in Montreal.

Table 4.—Expenditure on Meat and Quantity Consumed per Person per Week, Five Canadian Cities, 1953 and 1955 [a]

—	Halifax	Montreal	Toronto	Winnipeg	Vancouver	Five-city average
			—dollars per person per week—			
Expenditure, 1953	1.27	1.86	1.37	1.16	1.44	1.52
Expenditure, 1955	0.98	1.60	1.36	1.09	1.34	1.39
Quantity consumed, 1955			—pounds per person per week—			
All meaes [b]	1.63	2.31	2.15	1.92	2.26	2.17
Total, beef [b]	0.76	1.15	0.99	0.74	0.99	1.00
Lamb and mutton	0.04	0.05	0.06	0.03	0.09	0.06
Liver	0.05	0.06	0.07	0.06	0.07	0.06
Meat, canned	0.06	0.06	0.06	0.08	0.06	0.06
Meat, cooked	0.16	0.08	0.18	0.18	0.20	0.15
Pork [b]	0.44	0.58	0.59	0.56	0.62	0.58
Sausages	0.07	0.14	0.14	0.13	0.17	0.14
Veal	0.05	0.19	0.06	0.14	0.06	0.12

[a] Based on data contained in Reference Paper No. 76, *Urban Family Food Expenditure*, and other D.B.S. data.

[b] A few minor cuts representing about three per cent of expenditure on meat excluded.

Variations in meat prices caused variations in meat expenditures but meat consumption also varied greatly from city to city; it ranged from a low of 1.6 pounds per person per week in Halifax to a high of 2.3 pounds in Montreal [2].

To compare these figures with the Canadian average meat consumption of 139 pounds per person in 1955 some adjustment is necessary. This latter figure represents carcass weight whereas the urban expenditure study data are in term of retail weight. As retail weight of meat is probably between 80 and 90 per cent of carcass the retail weight of meat consumed per person in 1955 was between 111 and 125 pounds. The average consumption for the five cities was 2.2 pounds per person per week or 113 pounds per year. However, this does not include meat purchased in restaurants and other public eating places. So, the data for the five cities are quite consistent with the estimated average consumpion of meat for all Canada.

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[1] Johnston, Charlotte I. and L. E. Drayton, *Consumption of Food by Farm Households in New Brunswick*, 1945-1946: *Consumption of Food by Farm Households in Nova Scotia*, 1945-1946; *Consumption of Food by Farm Households in Prince Edward Island*, 1945-1946.

[2] For further details see Johnston, Charlotte I., *Quantities of Food Purchased in Urban Areas*, 1955, *The Economic Annalist*, June 1959.

In comparisons between beef and pork further adjustments should be made for cooked meats and sausages. These products averaged 0.3 pounds per person per week for the five cities but were not included in either beef or pork data. However, they would be included in carcass weight data.

The fact that Halifax is 20 per cent or more below the other four cities for total meat and all major meat categories except liver, canned meat and cooked meat is consistent with the findings of the rural diets studies referred to above. Apparently the Maritime provinces are an area of rather low meat consumption. These provinces produce less meat than they consume and have lower per capita incomes than other provinces; the combined price-income effects could easily account for a much lower rate of meat consumption than elsewhere in Canada.

The deviations in quantity of meat consumed in cities other than Halifax from the five-city average were fairly small. However, there are evidences of varying preference patterns among meats. For example, Montreal is high in consumption rate for beef and veal but not for other meats. Winnipeg, on the other hand, has a low consumption rate for beef, lamb and mutton but not for other meats.

Future Meat Consumption.—Our data provide a good basis for speculation on future meat consumption in Canada. The trend in total meat consumption is moving upwards and this trend probably stems from an increase in real income during the period for which data were available. Low income rates may well be the cause of the low rate of meat consumption in the Maritime provinces.

The Royal Commission on Canada's Economic Prospects tried to forecast the Canadian demand for farm products. According to this forecast our consumption

Table 5.—Household Meat Consumption Related to Family Income, United States, 1955[a]

Family income	Number of households	Persons per household	Meat bought per person
			—pounds—
All households of 2 or more	5,648	3.5	3.0
Under, $1,000	532	3.3	2.0
$1,000 – $1,999	647	3.3	2.5
$2,000 – $2,999	692	3.5	2.9
$3,000 – $3,999	867	3.7	2.9
$4,000 – $4,999	865	3.6	3.1
$5,000 – $5,999	513	3.7	3.3
$6,000 – $7,999	530	3.6	3.4
$8,000 – $9,999	181	3.0	3.3
$10,000 and over	199	3.6	3.6

[a] Based on data in *Food Consumption of Households in the United States.* Report No. 1, U.S. Department of Agriculture, 1956.

of red meats per person would be 147 pounds in 1965 and 169 pounds in 1980[1]. A continuation of the upward trend for total meat consumption, in evidence during the last 23 years, would result in quite similar estimates, namely, 148 pounds in 1965 and 163 pounds in 1980.

Both forecasts assume a continuing rise in per capita real income without any major shift in consumer preference. Questions thus arise as to how farm income increases might lift meat consumption. For North America the best indication possibly comes from data on quantities consumed by upper middle income families. We do not have data for Canada but a 1955 survey of food consumption provided them for the United States. The average family of two or more persons used three pounds of meat per person per week in April 1955 (Table 5). Families with an income of $5,000 to $10,000 used about 10 per cent more; meat consumption per person seemed to be fairly stable throughout this income range. Families with an income of over $10,000 ate still more meat but the behavior of families in the $5,000 to $10,000 range is probably the best measure of the limits of the effect of any probable income increases on meat consumption. If so, assuming increasing efficiency in the meat industry and rising real incomes, meat consumption per person in the U.S.A. will approach a limit of 10 per cent above its 1955 level. As the 1955 level was 163 pounds this limit would be about 180 pounds.

This limit is much above the forecasts and these may thus be assumed not to be unreasonably high. Nevertheless, we cannot be sure that our consumption rate for meat will be near the levels quoted. If the forecasts of the Gordon Commission on population and per capita consumption are realized we will eat 4.5 billion pounds of red meat in 1980. Our meat requirements will have once more doubled in a period of 25 years.

CHANGES IN AGRICULTURAL PRODUCTION IN THE MARITIME AND CENTRAL REGIONS OF CANADA, 1941-1956

C. VARKARIS

Canadian agriculture, as any other industry, is continuously adjusting itself to changes in the economy and, in particular, to changes in production techniques and in the demand for agricultural products.

Climatic conditions and soil types generally determine the predominant types of agricultural production in a given area. As these types of production vary from region to region, clarity and ease in handling the description and analysis of changes are gained by studying these changes on a regional basis. This article will be concerned with the Maritime Region, including Prince Edward Island, Nova Scotia, and New Brunswick and the Central Region, including Quebec and Ontario.

As a preliminary to an examination of comparative changes in the volume of production of different products, one must review the changes in the size of the farm population as well as the changes in the number of farms and in farm acreage.

In the Maritime Region, farm population declined by 24.3 per cent from 358,482 in 1941 to 271,218 in 1956; the number of farms by 31.8 per cent from 77,096 in 1941 to 52,623 in 1956; and the total acreage by 18.4 per cent from 8.9 million acres to 7.3 million acres.

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[1] Drummond, W. M. and W. MacKenzie, *Progress and Prospects of Canadian Agriculture*, Royal Commission on Canada's Economic Prospects, p. 32.

Changes in the Central Region were not quite so significant. The number of farm people there declined only by 6.1 per cent from 1,543,281 in 1941 to 1,448,607 in 1956; the number of farms by 20.9 per cent from 332,873 in 1941 to 263,219 in 1956; and the acreage by 11.5 per cent from 40.4 million acres in 1941 to 35.8 million acres in 1956 (Table 1).

Table 1.—Number of Farms and Farm Population, Maritime and Central Regions, Canada, 1941-1956

—	1941		1951		1956		Percentage change, 1941 to 1956	
	Number of farms	Farm population	Number of farms	Farm population	Number of farms	Farm populaton	Number of farms	Farm population
							— per cent —	
Prince Edward Island..........	12,230	51,067	10,137	46,855	9,432	43,296	−22.8	−15.2
Nova Scotia......	32,977	143,709	23,515	115,414	21,075	98,944	−36.1	−31.1
New Brunswick...	31,889	163,706	26,431	149,916	22,116	128,978	−30.6	−21.2
Maritime region, total............	77,096	358,482	60,083	312,185	52,623	271,218	−31.8	−24.3
Quebec...........	154,669	838,861	134,336	792,756	122,617	765,459	−20.7	− 8.8
Ontario...........	178,204	704,420	149,920	702,778	140,602	683,148	−21.1	− 3.0
Central region, total............	332,873	1,543,281	284,256	1,495,534	263,219	1,448,607	−20.9	− 6.1

Source: *Census of Canada.*

Table 2.—Cash Income from the Sale of Farm Products, Maritime Region, Canada, 1941-56

—	1941		1951		1956		Change in proportion of total cash income
	Value	Per cent	Value	Per cent	Value	Per cent	
	$'000		$'000		$'000		
Dairy products..............	9,882	22.8	25,445	23.7	27,612	22.9	+0.1
Forest products..............	4,592	10.6	11.613	10.8	14,684	12.2	+1.6
Cattle and calves............	6,184	14.3	21,133	19.7	16,001	13.3	−1.0
Eggs........................	2,445	5.6	9,187	8,6	14,027	11.7	+6.1
Fruits......................	3,194	7.4	1,159	1.1	2,461	2.0	−5.4
Hogs........................	4,161	9.6	14,050	13.1	8,307	6.9	−2.7
Poultry.....................	1,074	2.5	6,137	5.7	8,571	7.1	+4.6
Potatoes....................	6,395	14.8	10,148	9.5	20,178	16.7	+2.1
All other products...........	5,341	12.4	8,320	7.8	8,496	7.2	−5.2
Total value.........	43,268	100.0	107,192	100.0	120,337	100.0	

Source: Dominion Bureau of Statistics. *Handbook of Agriculture Statistics, Part II Reference Paper 25 and Farm Income, 1926-1957.*

Agricultural Production in the Maritime Region.—The main farm products in the Maritime Region, on the basis of cash value of farm products sold in 1956, were: dairy products, potatoes, cattle and calves, forest products, eggs, poultry, hogs, and fruits.

Total cash income from all sales of farm products in 1956 amounted to $120.3 million compared with $107.2 million in 1951 and $43.3 million in 1941 (Table 2). Dairy products headed the list in each of the three census years, representing from close to 23 per cent of the total in 1941 and 1956 and close to 24 per cent in 1951, even though the number of cows kept for milk dropped 21.2 per cent from 1941 to 1956 (Table 3). On the other hand, although the number of beef cows increased by 19.2 per cent the percentage which the sales of cattle and calves represented of the value of total sales declined by one per cent.

Sheep numbers declined by 34.4 per cent, the largest decline of any kind of livestock. Hogs dropped 17 per cent in numbers and 2.7 per cent in their share of over-all cash income. Poultry numbers rose by four million, or 27.2 per cent, and eggs rose 6.1 per cent and poultry meat 4.6 per cent in the percentage ranking as contributors to total cash farm income.

Table 3.—Changes in Livestock Numbers, Maritime Region, Canada, 1941-1956

—	1941	1951	1956	Change, 1941 to 1956
				— per cent—
Cows for milk	269,298	200,241	212,197	−21.2
Beef cows	236,966	225,782	282,573	+19.2
Sheep	275,034	185,005	180,551	−34.4
Swine	160,526	199,108	133,202	−17.0
Poultry	3,022,491	3,838,889	3,845,452	+27.2

Source: *Census of Agriculture.*

Table 4.—Cash Income from the Sale of Farm Products, Central Region, Canada, 1941-1956

—	1941		1951		1956		Change in proportion of total cash income
	Value	Per cent	Value	Per cent	Value	Per cent	
	$'000		$'000		$'000		
Dairy products	111,807	27.1	270,487	22.6	297,068	25.2	−1.9
Hogs	78,735	19.1	212,977	17.8	181,121	15.3	−3.8
Cattle and calves	67,570	16.4	273,677	22.9	240,626	20.4	+4.0
Eggs	22,819	5.5	71,514	6.0	88,520	7.5	+2.0
Poultry	15,257	3.7	89,044	7.4	102,760	8.7	+5.0
Potatoes	10,067	2.4	13,824	1.2	17,678	1.5	−0.9
Tobacco	12,329	3.0	57,380	4.8	64,089	5.4	+2.4
Fruits and vegetables	33,075	8.0	63,708	5.3	66,497	5.6	−2.4
All other products	61,064	14.8	142,996	12.0	121,636	10.3	−4.5
Total value	412,723	100.0	1,195,607	100.0	1,179,995	100.0	

Source: Dominion Bureau of Statistics. *Handbook of Agricultural Statistics Part II, Reference Papes 25 and Farm Income, 1926-1957.*

The cash value of fruit sales dropped by $733,000, or 5.4 percentage points in the total cash income picture. The potato acreage was reduced by 2,500 acres but potatoes gained 2.1 percentage points as contributors to total cash farm income.

The above data clearly indicate a marked shift towards poultry and eggs and away from hogs and sheep in the Maritime Region. For other agricultural products, the changes were not so pronounced; for some of them, indeed, the reduction in acreage or animal units was offset by an increase in yields.

Agricultural Production in the Central Region.—Cash income from the sale of farm products in Quebec and Ontario totaled $1,180 million in 1956 compared with $1,196 million in 1951 and only $413 million in 1941. The main sources of cash income from the sale of farm products in 1956 were, in order of importance: dairy products, cattle and calves, hogs, poultry, eggs, fruits and vegetables and tobacco (Table 4).

As in the Maritime Region dairy products was the most important single source of cash income; accounting for about one-fourth of the total. The number of cows kept for milk decreased 3.4 per cent from 1941 to 1956 and the proportion which sales of dairy products represented of total cash income dropped from 27.1 to 25.2 per cent (Table 5). The beef cattle population increased 26 per cent and cash income from sales of cattle and calves rose from 16.4 to 20.4 per cent of the total.

Table 5.—Changes in Livestock Numbers, Central Region, Canada, 1941-1956

—	1941	1951	1956	Change, 1941 to 1956
				–per cent–
Cows for milk	2,156,644	1,817,655	2,080,204	− 3.4
Beef cows	2,240,031	2,289,060	2,823,645	+26.0
Swine	2,690,029	2,863,796	2,435,374	− 9.4
Sheep	1,187,862	676,619	732,411	−39.3
Poultry	29,826,559	33,857,394	35,816,086	+13.5

Source: *Census of Agriculture.*

Hog numbers dropped 9.4 per cent and their importance as a source of cash income declined from 19.1 to 15.3 per cent of total cash income. Poultry numbers, on the other hand, increased by six million, or 13.5 per cent, to reach a total of 35.8 million in 1956. Eggs represented 5.5 per cent of the total cash income in 1941 and 7.5 per cent in 1956; the corresponding figures for poultry meat were 3.7 and 8.7 per cent, respectively.

Cash income from fruits and vegetables rose in value but declined from 8.0 to 5.6 per cent of total cash income. Tobacco sales contributed a greatly increased income and rose from 3.0 to 5.4 per cent as a proportion of all cash income.

The analysis of shifts in agricultural production in the two central provinces, during the 1941-56 period, points to a trend towards greater emphasis on poultry, beef cattle and tobacco and a smaller importance to hogs, fruits and vegetables in the over-all cash farm income pictures.

General Remarks.—Many factors account for the changes in the relative importance of different types of agricultural production in the Maritime and Central Regions.

The reduction in farm acreage and in the number of farms, coincidental with an increase in size of farm occurred chiefly during the postwar years. Greater employment opportunities outside agriculture, farm mechanization, and better market practices and organization all led to the abandonment of the poorest farm lands and the consolidation of small farms into larger economic units.

Changes in the diet and eating habits of the Canadian consumers and increased purchasing power incited farmers to make adjustments in their crop-livestock programs, adjustments which usually gave a greater importance to livestock in the farm business.

LAND VALUES IN MANITOBA, 1958

L. E. Sparling

Several of the intrinsic characteristics of farm real estate tend to complicate the measurement of land values. The farm market is not a well-organized market; only a small proportion of the total number of farms in a given area usually change hand each year which makes it well-nigh impossible to use data on sale prices as indicators of values for that area. Moreover, sale prices are prices for the whole farm property and not for its separate components—land, buildings, improvements, livestock and supplies. The quality of the land itself varies widely.

The general economic situation of agriculture in any area influences the direction and the amplitude of the changes in market value and the rate of transfer of farm lands. In a province like Manitoba where, on the whole, farm real estate represents about 70 per cent of total farm investment, changes in market values may greatly affect the welfare of the farm people and lead to changes in credit and other agricultural policies.

One cannot too strongly insist on the need for reliable and comprehensive data on land values. These data are of immense value not only to lending agencies and people concerned with sales or purchases of farm lands but also to farm leaders and government officials who have to know something about the capital structure of our agriculture.

To provide this type of information to the people of Manitoba, the Winnipeg office of the Economics Division sent mail questionnaires to some 180 real estate agents, lawyers, and Veterans' Land Act inspectors. These respondents supplied data on prices at which land was sold, the number of acres sold and the proportion of that acreage in improved land and gave a description of the farm buildings.

The 331 sales described by the respondents may not cover a very large proportion of the total number of sales made in 1958 but they are probably numerous enough and well enough scattered to give some reliable indication of the patterns of land values throughout the province.

Land Values in 1958

For purposes of analysis the agricultural part of the province was divided into five broad areas. In delineating these areas we gave special consideration to types of farming, quality of the soils, location factors, and boundaries of census divisions (Figure 1 and Table 1).

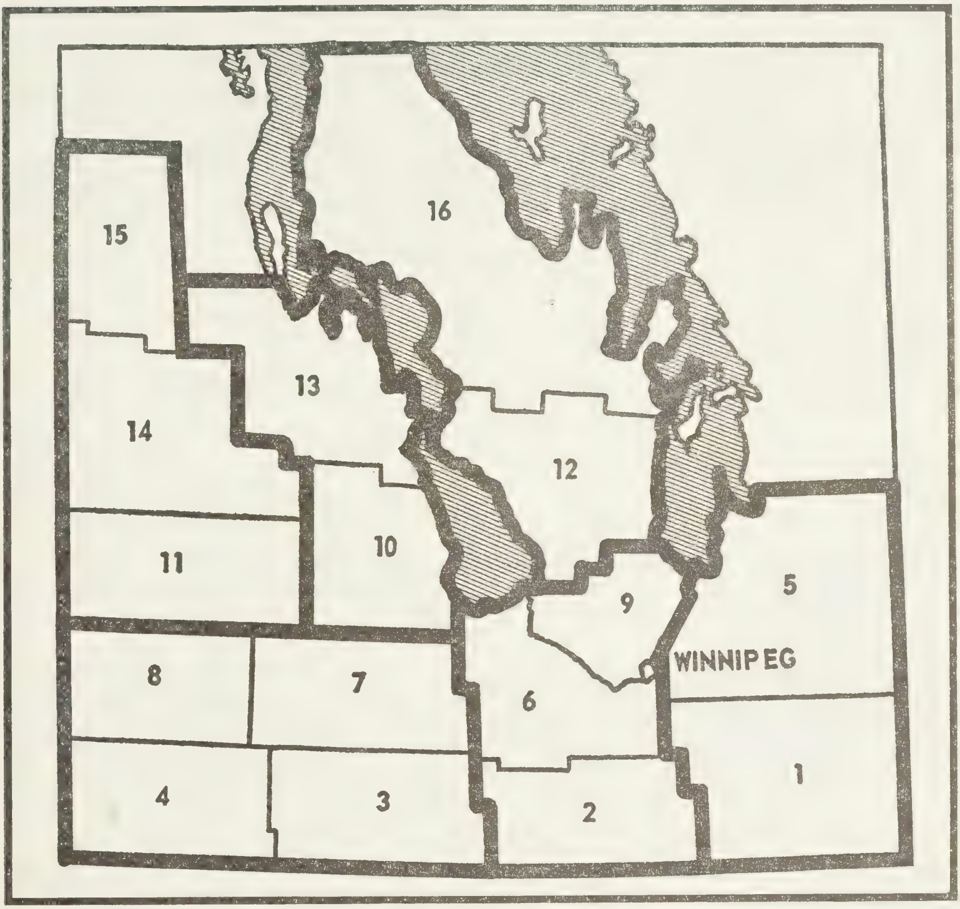

FIGURE 1.—Census Divisions, Southern Manitoba.

Table 1.—Census Divisions Included in the Study Areas, Total Farm Acreage, and Proportion in Improved Land, Southern Manitoba, 1956

Area	Census divisions included	Total acres	Per cent improved
		—'000—	—per cent—
Southwest	3, 4, 7, 8	5,452	68
Red River	2, 6, 9	3,549	83
Northwest	11, 14, 15	3,617	60
West Lake	10, 13	2,208	58
Interlake and East Manitoba	1, 5, 12, 16	3,106	45
All areas	....	17,932	64

SOURCE: *Census of Canada*, 1956.

Quality and Price of Land.—As each of the five areas is rather large and includes lands which vary quite widely in quality, we have classified sales according to quality of the land (Table 2). The proportion which cropland

Table 2.—Land Values According to Area and Proportion of Improved Land, 331 Farm Sales, Manitoba, 1958

Proportion in broken land	Number of sales	Average size of sale	Average percentage improved	Average price paid per acre	Standard deviation	Coefficient of variation
—per cent—		—acres—	—per cent—	—dollars—		
—Southwest—						
Nil	4	320	0	8	[b]	[b]
1–33	3	[a]	[a]	[a]	[b]	[b]
34–66	30	339	54	22	9	41
67–99	39	256	82	33	19	58
100	6	183	100	46	[b]	[b]
Total	**82**	**291**	**68**	**28**	**18**	**64**
—Red River—						
Nil	2	[a]	0	[a]	[b]	[b]
1–33	2	[a]	[a]	[a]	[b]	[b]
34–66	8	160	52	31	17	56
67–99	23	253	88	51	24	46
100	32	169	100	68	26	37
Total	**67**	**199**	**85**	**55**	**29**	**52**
—Northwest—						
1–33	4	225	29	10	[b]	[b]
34–66	44	260	56	23	10	41
67–99	27	232	78	37	16	43
100	2	[a]	[a]	[a]	[b]	[b]
Total	**77**	**245**	**63**	**28**	**14**	**52**
—West Lake—						
Nil	7	180	0	5	[b]	[b]
1–33	1	[a]	[a]	[a]	[b]	[b]
34–66	11	252	54	24	12	49
67–99	23	196	88	35	13	36
100	2	[a]	[a]	[a]	[b]	[b]
Total	**44**	**214**	**65**	**27**	**16**	**58**
—Interlake and East Manitoba—						
Nil	8	160	0	2	1	52
1–33	17	173	23	16	6	40
34–66	19	155	51	29	12	43
67–99	9	144	80	40	11	29
100	8	70	100	66	19	29
Total	**61**	**148**	**47**	**28**	**21**	**77**
—All Manitoba—						
Nil	21	197	0	5	4	91
1–33	27	221	24	13	6	48
34–66	112	256	55	24	11	46
67–99	121	231	83	38	19	50
100	50	157	100	62	26	41
Total	**331**	**225**	**66**	**33**	**23**	**70**

[a] Less than four sales and hence not reported.
[b] Less than eight sales and not calculated.

made up of the total acreage of a given parcel of land was used as an index of land quality. As may well be expected, land prices were closely associated with the relative size of the acreage in cropland. Price variability according to land quality was particularly evident in the Interlake and East Manitoba area (Table 2).

Within each of the land quality groups there were variations in productivity which influenced land values. Each average price listed in Table 2 is made up of individual prices that spread over a considerable range.

For example, in the southwest area, where the average price paid was $28 an acre, about two-thirds of the prices paid were within a range from $10 to $46 an acre. In the Red River area the average price paid was $55 an acre and two-thirds of the prices ranged from $26 to $84 an acre.

Price variations as percentages of the average, for the five areas, were as follows:

Area	Average price (dollars)	Coefficient of variation
Southwest	28	64
Red River	55	52
Northwest	28	52
West Lake	27	58
Interlake and East Manitoba	28	77
All Manitoba	33	70

For the Southwest Area where the average price was $28 an acre and the coefficient of variation 64 per cent about two-thirds of the prices paid for land fell within the range of 36 to 164 per cent of the average price, or between $10 to $46.

In the Northwest and in the Interlake and East Manitoba area the average prices paid were the same, $28 an acre, but the coefficient of variation ranged from 52 in the former to 77 per cent in the latter area. Two-thirds of the prices paid ranged from $13 to $43 an acre in the Northwest and from $9 to $50 in the Interlake and East Manitoba area. The larger the coefficient of variation, the wider the variations in prices.

Average prices were almost indentical at $27 an acre in the West Lake area and $28 in the Southwest, Northwest and Interlake and East Manitoba areas but were about twice as high at $55 an acre in the Red River area. This latter area, which includes the Portage la Prairie plains, also had a higher proportion of good quality land than the other areas. The prices paid reflect the limited supply of high quality land, the greater demand for land in this area and a favorable market location. The suitable climate in the southern part of the area for the cultivation of sugar beets and sunflowers is another factor contributing to higher land prices.

Fairly high prices are paid for some high quality farm land in the Steinbach and Beauséjour districts and in the eastern edge of the Red River valley. These districts are all located in the Interlake and East Manitoba area. Were land sales from these districts excluded from calculations of land prices, the average price for the area as a whole would be much lower and there would be a higher proportion of sales of land of lower value.

Additive Value of Buildings.—Of the 331 sales reported in 1958 as many as 136 were sales of lands without buildings. Sales of lands with buildings consisted of 59 with buildings classed as poor, 81 as fair, and 55 classed as good by the respondents. These respondents also estimated the bareland value for each sale. The additive value of the buildings was determined by subtracting these estimates from the market prices.

Table 3 describes the value of farm buildings as a percentage of the aggregate value of land and buildings for the five areas taken as one group. For the 195 sales of lands with building the average estimated share of the buildings was 22 per cent of the total sale price. Buildings classed as fair contributed about twice as much to farm value as did poor buildings, and good buildings about three times as much. For individual cases, of course, the value of the buildings may vary widely, depending on the buyer's appraisal of the usefulness of the buildings.

One would hardly expect to see buildings contribute to a lowering of farm values. In Table 3, however, he will see that sales of land without buildings averaged $5 more an acre than lands with poor buildings. Here, this type of distortion cannot be explained away by the mention of differences in land quality. A possible explanation, though, may reside in differences in acreages. An examination of Table 4 reveals that prices paid for land were inversely related to the size of the parcel sold. Moreover, for the two groups concerned, not only was there a difference in the average size of the parcels but the distribution of the sales according to size differed considerably. Twenty-six per cent of the lands sold without buildings were less than a quarter-section in size and 83 per cent had less than 180 acres. Of the lands sold, with buildings classed as poor, only nine per cent were smaller than a quarter-section in size and 56 per cent were under 180 acres. Moreover, several of the sales of smaller parcels, without buildings, were made around Steinbach where land prices are fairly high.

Table 3.—Additive Building Value and Proportion of Value Attributed to Buildings, According to Condition of Buildings, 195 Farm Sales, Manitoba, 1958

—	Number of buildings	Poor buildings	Fair buildings	Good buildings	All sales with buildings
Number reporting	136	59	81	55	195
Average price paid per acre.............$	28	23	39	49	37
Average additive value per acre.........$	0	2	8	14	8
Average size of purchase.........acres	177	228	262	287	—
Average percentage of improved acreage	61	61	70	79	—
Building value as a percentage of total price.....................per cent	0	9	21	29	22

As the quality of the land improved, the additive value of the buildings also increased. Our analysis of the collected data revealed that on lands with buildings and up to 33 per cent of the acreage in improved land the average value of the buildings was the equivalent of $4 an acre, on lands with from 34 to 66 per cent of the acreage in improved lands $5 an acre and on lands with 67 per cent or more of the acreage improved $11 an acre.

Prices Paid and Sizes of Purchases.—The average prices paid for an acre of land generally tended to decrease with an increase in the size of the acreage purchased (Table 4). This tendency was similar for all three groups of land quality and, surprisingly enough, this tendency even seemed to strengthen itself as the quality of the land improved.

Building values represented a much greater proportion of the total value on small than on large farms. One important factor contributing to higher average prices for smaller parcels of land is undoubtedly the increasing number of farmers buying more land to add to the size of their farm business. A farmer is often willing to pay a higher price for a nearby piece of land to add to his size of business or farm unit.

Land Market Activity

Respondents were asked what changes they had noticed in the farm land market picture in 1958 by comparison with 1957. Of the 73 farmers who replied to this question 21 said that there had been a rise in the amount of farm land offered for sale, 15 said that it had decreased, and 37 that it had remained constant. Thirteen respondents thought the number of persons interested in purchasing land had increased, 30 that it had decreased, and 30 others that it had remained the same. There was no significant difference of opinion among the five areas of the province.

The following are quotations from comments made by respondents—people dealing in the farm land market.

Table 4.—Average Price Paid Per Acre, 331 Farm Sales, Manitoba, 1958

Acres purchased	Number of sales	Average acres per sale	Per cent Improved	Price paid per total acre
		– 0 – 33 per cent improved		
Up to 85	5	76	20	12
86–250	33	162	12	9
251–490	8	342	18	11
491 and more	2	—	—	[a]
Total	**48**	**210**	**13**	**9**
		– 34 – 66 per cent improved		
Up to 85	3	—	—	[a]
86–250	58	191	54	26
251–490	44	328	58	23
491 and more	7	657	50	22
Total	**112**	**271**	**57**	**24**
		– 67 – 100 per cent improved		
Up to 85	24	67	94	55
86–250	88	161	88	46
251–490	58	334	86	42
491 and more	1	—	—	[a]
Total	**171**	**209**	**88**	**46**

[a] Less than four sales and hence not reported.

"Only demand is from farmers increasing the size of their farms."

"Trend to expansion appears to be increasing demand".

"No outsiders looking for land...only sales are made to farmers interested in increasing their holdings".

"There is too little spread between land with and without buildings... most sales arise from farmers increasing their farm size".

"Only sales being made are those requiring small down payments...less than $5,000 down payment".

"Sellers wish large cash payments because of farming hazards".

"Insufficient funds for down payment is slowing farm sales".

"Plenty of farms can be bought but shortage of cash down payment... more money working in the city...farming costs are too high".

"Less demand, owing to shortage of cash for down payment".

"Only way to sell land is at bargain prices".
"Prices are holding up but buyers are not plentiful".
"Farmers wish high prices...buyers not too interested".
"More land being offered for sale but prices are high".
"Lack of available credit has slowed sales activity...".
"Increased interest but financial assistance is limited".
"Demand would increase if credit was more readily available".
"Future payments appear risky...purchasers hesitate to buy".
"Price too high...price of grain is not in line with land and machinery".
"Not much land being offered for sale. Not much change in land values".
"Prices lower than in 1950, the peak year".
"Fair demand for stock farms".
"...expect increase in sales in 1959".
"Very little land changes hands in this area"—(Red River Area).

PUBLICATIONS OF THE ECONOMICS DIVISION

Canada—Production, Trade and Prices for Principal Agricultural Products, 1925-1958. Ottawa. June 1959. pp. ii + 63.

A working statistical handbook depicting the changes in production, trade and prices for 38 Canadian agricultural products.

Directory of Farmers' Organizations and Marketing Boards in Canada, 1959. Compiled by Trempe, André A. Ottawa, June 1959. pp. 29.

The fifth edition of the Directory.

Exports, Imports and Domestic Disappearance of Agricultural Products as a Percentage of Production—Canada, 1935 to 1957. Berthiaume, Rachel. Ottawa, July 1959. pp. 8.

A report prepared in co-operation with the Agriculture Division, Dominion Bureau of Statistics. It replaces earlier reports published in 1958 and 1944.

Co-operation in Canada, 1958. Heighton, V. A. Ottawa, July 1959. pp. 17.

The 27th Annual Summary on the extent and operations of co-operative associations in Canada.

Canada—Trade in Agricultural Products with the United Kingdom, the United States and All Countries, 1957 and 1958. Ottawa. July 1959. pp. ii + 23.

The fourth in a series of annual bulletins. In addition to statistics on various commodities for 1957 and 1958 it contains a table on exports and imports of agricultural products for the 1930-1958 period.

A survey of the Law of Water in Alberta, Saskatchewan and Manitoba. Gisvold Per. Ottawa, May 1959. Pub. 1046. pp. 103. Available from The Queen's Printer and Controller of Stationery, Ottawa. Price—$1.00.

A detailed report on a joint study by the Prairie Farm Rehabilitation Administration and the Economics Division. It forms part of a series of studies *to co-ordinate all facts known concerning the geographical location of inter-provincial watersheds in relation to present and probable future activity and needs, and to evaluate the legal and economic significance of various physical and engineering possibilities...*

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

In Canada: The Ryerson Press, 299 Queen St. West, Toronto; and Periodica Inc., 5112 Ave. Papineau, Montreal 34.

National Grain Policies. Prepared by the Food and Agriculture Organization Group on Grains. 1959. pp. 5 + 108.

A review of national policies and measures affecting grains in 21 countries. Most of the country statements were originally drafted by the Canadian rapporteurs to the FAO Seminar on Grains held in 1958. For each country, the information is presented in the following order:

I. Measures affecting grain production and marketing.
  A. Policy objectives and production targets.
  B. Price support policy.
  C. Aids to grain production.
  D. Marketing organizations.
II. Measures affecting grain consumption.
III. Measures affecting foreign trade in grains.

Monthly Bulletin of Agricultural Economics and Statistics. Vol. VIII, Nos. 4 and 5, April and May 1959. Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy.

The April issue contains a well-documented article on *Investment in United States Agriculture* by Paul Kohn; a special feature dealing with *Food Fats and Oils Situation in the U.S.S.R.*; notes on recent trends in hard fibers and on the current situation and outlook for citrus fruit; and statistical tables on production, trade and prices for some agricultural products.

The May issue has an article by James P. O'Hagan on *Australia and New Zealand in the Export Recession;* notes on world trade in meat in 1958, on the world coffee situation, and quarterly notes on commodity markets; and statistical tables on production, trade and prices for some agricultural products.

OTHER PUBLICATIONS

Farm Organization and Incomes in South West England, 1957. Report No. 111. Morris, S.T., H.W.B. Luxton and G.D. Davies. Department of Economics (Agricultural Economics), University of Bristol, Devon, England. April 1959. pp. 65. Price: 5/.

Self-feeding of Silage in Devon, 1958-59. Report No. 112, Langley, J. A. Department of Economics (Agricultural Economics), University of Bristol, Devon, England. June 1959. pp. 13. Price 2/6.

A report concerned with the experience of a *group of pioneers in dairy herd management.*

An analysis of the financial results of farming in Cornwall, Devon and Dorset mainly concerned with changes in output, costs and incomes from 1956 to 1957.

Operations Research—methods and problems. Sasieni, Maurice, Arthur Yaspan and Lawrence Friedman. John Wiley & Sons, Inc., New York and Chapman & Hall, Ltd., London. 1959. pp. XI + 316.

A textbook on operations research for students who have a working knowledge of the differential and integral calculus. It starts with some introductory material on probability and sampling and is followed by chapters on inventory, replacement, waiting lines, competitive strategies, allocation, sequencing and dynamic programming.

This textbook will be a most welcome addition to the library of the practitioner who has long been looking for a book which contains illustrative problems and exercises as well as comment on the general theory and techniques. All but the two introductory chapters explain the general theory and the techniques concerning a particular problem area in operations research, some completely solved problems to demonstrate these techniques, and others for the reader to solve.

Our Food Costs. Canada Department of Agriculture. 1959.

A series of seven diagrams depicting changes in food costs and developments relating to these costs. The diagrams are accompanied by explanatory notes.

Dairy Production, Costs, Returns and Management. (Ontario Dairy Herd Improvement Association, 1952-56). Clark, J. H. Farm Economics and Statistics Branch, Ontario Department of Agriculture, Toronto. 1959. pp. 47.

A study of production methods and earnings for the 1952-56 five-year period. It compares the methods employed by the more successful farmers with those of the less successful, giving special attention to conditions associated with highest earnings.

Significant Tables from D.H.I.A., Year Ending 1958. Farm Economics and Statistics Branch in Co-operation with Livestock Branch, Ontario Department of Agriculture, Toronto. 1959. pp. 38.

A collection of tables dealing with efficiency factors which affect farm income. The tables are sorted into three series: Wholemilk Herds, Southern Ontario; Wholemilk Herds, Northern Ontario; and Processed Milk Herds.

The Queen's Printer and Controller of Stationery, Ottawa, 1959

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION
J. F. BOOTH, Director

DECEMBER 1959 **Vol. XXIX No. 6**

CONTENTS

Page

Economic Prospects for 1960 123

Current Economic Conditions 125

Evaluation of Rotations in the Park Area of Saskatchewan .... *J. K. Wiens* 127

Changes in Agricultural Production in the Prairie and British Columbia Regions of Canada, 1941-1956 ..... *C. Varkaris* 134

Some Factors Contributing to the Success of Farm Operations on the Grey Wooded Soils of Alberta ..... *R. J. McFarlane* 137

Publication of the United Nations 143

EDITORIAL COMMITTEE:

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Published by Authority of the Honourable Douglas S. Harkness
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
WHOLESALE PRICES, FARM PRICES AND LIVING COST INDEXES

Year and Month	General Whole-sale Price	Wholesale Prices of Canadian Farm Products[a]			Farm Prices of Agricultural Products[b]	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production[e]
		Total[b]	Field[b]	Animal		Composite[c]	Equipment and Materials[d]	Total	Food	
			1935-39=100					1949=100		1949=100
1913	83.4	....	....	....	....	....	85.4	49.2	44.4	....
1914	85.4	....	....	....	....	85.3	90.2	49.6	46.0	....
1915	91.8	....	....	....	....	91.6	96.9	50.3	46.8	....
1916	109.8	....	....	....	....	100.5	101.7	54.2	51.8	....
1917	148.9	....	....	....	....	140.5	140.7	63.7	66.9	....
1918	166.0	....	....	....	....	160.2	164.1	72.0	76.9	....
1919	174.7	....	....	....	....	167.9	169.1	78.8	82.2	....
1920	203.2	....	....	....	....	186.5	190.1	90.5	94.4	....
1921	143.4	....	....	....	....	152.5	147.4	80.9	72.5	....
1922	126.8	....	....	....	....	134.1	124.6	74.9	61.5	....
1923	127.7	....	....	....	....	130.6	118.3	75.2	61.9	....
1924	129.5	....	....	....	....	131.9	122.3	74.0	60.7	....
1925	133.8	....	....	....	....	131.8	123.2	74.6	63.4	....
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.8	211.3	121.9	118.6	155.4
1958	227.8	220.4	166.3	274.5	242.0	259.9	213.0	125.1	122·1	152.6
1958										
Oct.	227.2	211.8	154.4	269.3	236.4	....	....	126.0	123.4	152.2
Nov.	228.8	212.1	155.2	269.1	235.5	....	....	126.3	123.2	155.1
Dec.	229.3	217.6	156.6	278.7	238.0	....	....	126.2	122.2	156.8
1959										
Jan.	229.7	217.7	156.6	278.7	241.4	258.8	218.2	126.1	122.3	159.5
Feb.	230.8	214.8	155.6	274.0	239.3	....	....	125.7	121.2	162.0
Mar.	230.8	212.4	155.4	269.5	236.9	....	....	125.5	120.0	161.3
April	231.2	213.7	156.4	271.0	236.3	271.4	220.2	125.4	119.3	165.5
May	231.2	218.8	166.5	271.0	238.5	....	....	125.6	118.5	164.4
June	230.7	221.9	173.1	270.6	239.6	....	....	125.9	119.1	164.7
July	231.0	222.7	172.6	272.8	242.2	....	....	125.9	119.2	162.6
Aug.	230.8	221.8	169.0	274.9	241 7	273.5	218.8	126.4	120.5	163.3
Sept.	230.8	219.0	161.0	277.0	238.7	....	....	129.1	122.4	......
Oct.	....	....	....	....	235.9	....	....	128.0	124.2	....

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Prices at terminal markets.

(b) Indexes August 1956—July 1957 include final barley and wheat payments announced June 11, 1958.

(c) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.

(d) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

(e) For a detailed description of concepts, sources and methods see D.B.S. Reference Paper (61-502) Revised *Index of Industrial Production, 1935-57.*

ECONOMIC PROSPECTS FOR 1960[1]

Most countries of the world are experiencing an increase in domestic business activity and external trade. Quantitative controls and discrimination against dollar imports were reduced in 1959; however, the trade restriction picture is less favorable to agriculture than to other fields of trade.

World food production reached record levels in the 1958-59 crop year. Total world stocks of agricultural products had been fairly stable for some years but increased by about 10 per cent since the previous crop year. North American stocks increased by about the same proportions as the world total. World food supplies are expected to rise in the 1959-60 crop year although bread grain production will be smaller than a year earlier.

In Canada, the economic recovery and expansion that began in 1958 was accelerated in 1959. There was a sharp rise in consumer expenditures and in business outlays on plant and equipment. There was also greater steadiness in the labor market. The improvement in economic conditions carried industrial production to a record level.

The current rise in business investment will likely continue in 1960. With increased employment, as well as rising real income and large personal savings deposits, a continuation of the upward trend in consumer spending is indicated.

There was less unemployment this year than in 1958. Except on dairy farms and, seasonally, in some areas where special crops are grown, there was no shortage of labor. A downward trend in the number of self-employed workers and unpaid family help was partly offset by an increase in the number of paid workers, with the result that employment in agriculture declined less than in other recent years.

The demand for labor in non-farm industries is expected to be strong in 1960. This demand will probably draw farm workers at an increasing rate, leaving more openings in agriculture for immigrants than in 1959.

Crop Conditions.—Unusually warm dry weather characterized the 1959 growing season in the Prairie and Central Provinces. Heavy rains in late June across the Prairies were in time to avert serious drought damage to crops in this region so that there were prospects of near average yields as the harvest began. However, wet weather starting about mid-August, followed by snow storms in early October, has imperilled a considerable portion of the grain, fodder and other crops of the Prairie Provinces.

Most of the crop production estimates used in this report were based on surveys made at mid-September. Similar conditions existed in 1951 but much of the crop was recovered when the following spring proved favorable.

A variety of other hazards, including frost, wind and hail in parts of Eastern Canada and British Columbia have caused significant losses on fruit farms and a severe cut in tobacco production.

Grains and Feeds.—World wheat production in 1959 was the second highest on record. With large carry-over stocks, total supply is far in excess of effective world demand. The Canadian wheat supply of the 1959-60 crop year is expected to be about 967 million bushels if the grain now under snow is recovered. This is four per cent less than last year's total and 16 per cent less than the record supply in 1956-57. If Canada's domestic disappearance and exports are about the same as during the 1958-59 crop year, carry-over stocks at July 31, 1960 will be about 500 to 525 million bushels. About 100 million bushels of this total may be in farm storage.

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[1] Based on statements prepared for the 1959 Federal-Provincial Agricultural Conference.

The Canadian oats supply for the 1959-60 crop year was estimated at 543 million bushels. This is two per cent less than in 1958-59. Domestic disappearance into feed channels is expected to be slightly greater than a year earlier, owing to increased livestock and poultry production during the current crop year. Total disappearance of Canadian oats will likely be sufficient to reduce the carry-over.

The Canadian barley supply for the 1959-60 crop year is estimated at 356 million bushels—about the same as in 1958-59. Total disappearance is likely to exceed production by a small amount, leaving stocks of slightly more than 100 million bushels for carry-over next July.

Supplies of rye have been estimated at 16 million bushels, 11 per cent less than in 1958-59. Shipments to the United States, Canada's largest export market, are limited by an import quota. Total disappearance during 1959-60 is likely to exceed the amount produced; if so, the carry-over will be reduced.

Fodder supplies are considerably larger than a year earlier and, except on a local basis, shortages are not expected unless the feeding season is unusually prolonged. Supplies of millfeeds, high protein feeds and packing house by-products available to Canadian feeders are expected to be about the same as last crop year.

Special Crops.—Production of flaxseed, soybeans and grain corn in 1959 is estimated to be lower than a year earlier. Flaxseed production is also lower this year in most of the countries that compete with Canada in export markets. As a result, Canadian flaxseed prices are expected to be firm throughout 1959-60. Early season prices for soybeans were adversely affected by prices in the United States and have been lower than a year earlier. However, a fairly good seasonal price rise is expected. Large corn supplies in the United States have been depressing North American corn prices generally and seem likely to continue doing so throughout the crop year.

Price supports have been announced for 1959 crops of soybeans, sugar beets and sunflower seeds.

World sugar prices are below those prevailing a year ago. As a result, Canadian sugar beet prices in 1959-60 are unlikely to be any higher than in 1958-59.

Keen competition is expected for supplies of new-crop flue-cured tobacco throughout the current crop year, as a result of the crop being 22 per cent smaller than in 1958. If exporters buy more than 20 million pounds, domestic manufacturers may have insufficient supplies of old-leaf tobacco to meet their manufacturing needs in 1960-61.

Fruits and Vegetables.—Production of apples and other tree fruits and small fruits, except blueberries and loganberries, was down in 1959 from the high levels of the preceding year. Nevertheless, production of most fruits with the notable exceptions of strawberries and raspberries were near their long term averages. Export demand for apples is expected to be considerably better than last year owing to smaller crops in the United States and Europe. Supplies of most canned and frozen fruits are expected to be less plentiful than a year earlier.

The crop of potatoes in 1959 was slightly smaller than in 1958, and an improvement in price is expected for both seed and table potatoes. Production of frozen peas has continued to increase in response to growing demand.

Supplies of canned tomatoes and other canned vegetables are likely to be smaller than during 1958-59 but no shortages are foreseen.

Livestock.—The most striking development in the livestock sector in 1959 was the near-record hog production. Output in 1960 is forecast at 7.0 to 7.5 million hogs, a decline of 15 to 20 per cent from 1959. Prices are expected to remain stable at recent levels until the change in method of price support becomes effective in January 1960 and allows the free market to establish prices.

Cattle marketings and exports are both expected to be slightly lower in 1960, and domestic consumption of beef may decline as a result of increased competition from pork. Canadian cattle prices will continue to be influenced by those in the United States where slightly lower prices are being forecast. Calf prices are also likely to be slightly lower in 1960 and fewer calves may be marketed.

Marketings of sheep and lambs are likely to increase unless flock expansion continues at the same pace as during the past two years. Consumption of lamb is expected to show little change from that of 1959.

The price outlook for wool is much better than at this time last year.

About 18 billion pounds of milk will have been produced this year, nearly the same as in 1958. A slight decline is expected next year and this, combined with a probable increase in demand and sales of dairy products in general, will result in an improvement in the balance between production and consumption of butter. Nevertheless, the total supply of butter will be such that prices are likely to remain at support levels until April 30, 1960. Prices after this date will depend on governmental action. Producer and consumer prices of fluid milk were adjusted upward in some areas during the latter half of 1959 and such adjustments are likely to become general by the spring of 1960.

Domestic requirements for cheese during 1960 are likely to be about 84 million pounds, and of evaporated milk about 320 million pounds. Additional quantities will likely be produced in response to export demand. Cheese prices have been at record levels this year, owing to limited world supplies, and are likely to remain high until at least the spring of 1960.

The domestic market for dry skimmed milk is expected to absorb about 120 million pounds next year but little is likely to be produced for export.

Eggs and Poultry.—The number of laying hens has been lower than a year earlier since mid-summer and is expected to remain so until at least next summer. Consequently, egg output during the first half of 1960 may be slightly below that of a year earlier even if production per hen continues to increase. Market prices will probably be below the national average support price, at least in some regions.

Chicken broiler production is expected to continue increasing in some areas in 1960, but no further gains are likely in Ontario where the industry is most fully developed. Turkey production will probably be about the same as in 1959. Support prices for turkeys will be reduced, effective next January 1.

Farm Income.—The index of farm production is likely to be about five per cent higher in 1959 than in 1958, mainly because of an increase in the output of wheat and oats and a continued rise in the production of livestock.

Prices paid by farmers for commodities and services used in production have been about three per cent higher in 1959 than in 1958.

Farm cash income this year is likely to be a little above the 1958 level as a result of larger marketings offsetting slightly lower prices. Prospects for next year are that it will be about the same as in 1959 or slightly lower. Since competition in the world wheat markets is expected to increase, and farm operating expenses to rise, realized net income in 1960 will probably be lower than in 1959.

CURRENT ECONOMIC CONDITIONS

Commodity Exports.—Canada's total commodity exports rose from $455.3 million in October 1958 to $471.9 million in October 1959, and reached a new peak for the month of October. This gain, following a sharp rise of 15 per cent in September 1959, brought the January-October total to $4,193.8 million from $4,071.6 million in the corresponding period of 1958.

Most of the gain stemmed from increased shipments to the United States. They rose from $273.3 million in October 1958 to $298 million in October 1959 and brought the January-October total from $2,401.9 million in 1958 to $2,618.1 million in 1959. Total exports to Commonwealth countries other than the United Kingdom rose from $19.8 million in October 1958 to $26.3 million in October 1959 but declined from $236.9 million in January-October 1958 to $226.9 million in the corresponding period of 1959.

Exports to the United Kingdom declined from $77 million in October 1958 to $72.6 million in October 1959 and the 10-month total from $640.1 million in 1958 to $639.4 million in 1959. Shipments to all other countries dropped from $85.2 million in October 1958 to $75 million in October 1959 and from $792.7 million in January-October 1958 to $709.4 million in January-October 1959.

Industrial Production.—Canada's seasonally adjusted index of industrial production reached a record level of 166.9 in September 1959, a 2.3 per cent increase from the 163.2 level of August 1959.

Commodities and Services Used by Farmers.—Canada's composite price index of commodities and services used by farmers (1935-39 = 100) rose from 245.5 in August 1958 to 252.5 in August 1959. Exclusive of farm family living, the composite index rose from 263.9 in August 1958 to 273.5 in August 1959.

Higher wage rates between April and August 1959 were the major contributors to the rise in the composite index. The all-Canada farm wage rate index rose to a record 572.8 in August from 554.6 in April and 534.0 in August 1958.

The index for farm equipment and materials dropped from 220.2 in April to 218.8 in August 1959; decreases for feed, seed, gasoline, oil and grease, and farm machinery offset increases for hardware and building materials.

The all-Canada farm living component index rose from 218.0 in August 1958 to 220.0 in April and 220.9 in August 1959. Indexes for clothing, household equipment, health maintenance and the miscellaneous group rose between April and August but the indexes for fuel and food declined.

Employment.—Employment declined less than seasonally between September and October 1959. The number of persons with jobs at mid-October was estimated at 6,053,000, about 25,000 fewer than a month earlier but 189,000 more than a year earlier. Agricultural employment declined by about 52,000 between September and October, a normal drop for this time of year, but non-farm employment increased by about 27,000.

Milk.—Milk production in October 1959 was estimated at 1,564 million pounds, a decrease of only 0.5 per cent from the total for October 1958. The January-October output totaled 15,738 million pounds, about the same as the 1958 January-October output.

Sales of fluid milk and cream, in milk equivalent, totaled 465.8 million pounds or two per cent more than in September 1958. Sales in January-September 1959 were also two per cent larger than for the 1958 January-September period; they totaled 4,195 million pounds.

Wheat.—Overseas export clearances of Canadian wheat in the week ended November 4 totaled 5,960,000 bushels, bringing the August 1-November 4 total to 69,980,000 bushels from 67,154,000 bushels in the corresponding period of 1958. Visible supplies in all North American positions at November 4 totaled 369,881,000 bushels, a decline of 1.1 per cent from the total of 374,080 bushels for the preceding week and of one per cent from the total of 373,708,000 bushels a year earlier.

CORRIGENDUM

In the first column of Table 3, page 116, October 1959 issue, substitute "No buildings" for "Number of buildings".

EVALUATION OF ROTATIONS IN THE PARK AREA OF SASKATCHEWAN

J. K. Wiens

An important decision on farm practices concerns the type of crop rotation or cropping sequence to follow and the kinds of crops to grow. Rotations are becoming a more important factor in production as the farm economy of the Park area of the Prairie Provinces[1] reaches the stage of a mature economy.

The net return from various rotations is only one of many considerations in weighing the advantages and disadvantages of rotations. There are other factors such as the maintenance of organic matter, handling of excessive combine straw, control of soil erosion, control of perennial and annual weeds, machinery and capital requirements, labor considerations, personal likes and dislikes of certain farmers, feed requirements of complementary or supplementary livestock enterprises and other factors. One cannot find a specific rotation that is best for all farms in an area. However, the farm management economist should be able to give some guidance to farmers who ask: "Can a different cropping practice provide net returns comparable with or higher than returns secured with my present rotation?"; "Would a different cropping practice decrease the present summerfallow acreage?"; or "Would a different rotation increase yields and yet leave present net returns about the same?". The two-year rotation and a very flexible forage rotation are now gaining in popularity at the expense of the three-year summerfallow-grain-grain rotation.

Fallowing is an expensive proposition in the parkland and yet there has been a trend toward an increase in the summerfallow acreage in recent years. Moreover, summerfallow fields are subject to water erosion and this increase in summerfallow acreage could thus increase the incidence of water erosion. This increase occurs despite the more prevalent use of chemicals for weed control.

A study was conducted by the Economics Division to provide a comparison of the net returns derived from the main rotations followed on loam and clay soils in the parkland area. The specific objectives of the study were as follows:

1. Compare net returns from—
    a) Summerfallow-grain with summerfallow-grain-grain rotations,
    b) Summerfallow-grain-grain rotation with a similar rotation which also includes a forage acreage which is rotated in the land use.
2. Consider other factors influencing farmers' decisions as to cropping systems.

Method of Study.—The study was divided into two major parts. In the first year, (1954), farms were sampled according to crop rotation on loam soils in the Moosomin area of Southeastern Saskatchewan. The next year (1955), farms were sampled according to crop rotation on clay soils in the Tisdale-Arborfield area of Northeastern Saskatchewan.[2] Data to set up budgets were collected during the two years. In the first call made during the summer months, information was obtained on land use, rotational practices, field operations, cultural practices, crop yields for all fields for the previous year and the over-all farm yield with summerfallow and stubble crops in earlier years, and the livestock enterprise. The second call was made late in the fall of the same year and data were obtained on labor requirements, machinery, current yields by fields, and all field work performed since the summer call. Thus, a full description of all field operations, land use, labor requirements, machinery organization and yields was obtained for a complete cropping season.

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[1] Mitchell, J., Soil Survey Report No. 12, University of Saskatchewan, Saskatoon, Saskatchewan, June, 1944.

[2] Since the two survey areas have soils that are representative of soil types in the Park area of Saskatchewan, they will be referred to as loam soil and clay soil areas.

The first year of the study, in the Moosomin area, the study area was outlined from a soil map so that only farmers on loam soils would be interviewed. Enumerators selected farms at random within this area to have a sample for two size groups of farms for the two-year and three-year fallow-grain rotations. The small farm size group had from 175 to 350 acres and the large farm group had from 350 to 700 acres under cultivation. Enumerators also collected data from a sample of farms that used at least 10 per cent of their cultivated acreage for forage production.

For the clay soils in the Tisdale-Arborfield area, ownership and occupancy data were summarized in 1955 for the study area. By using these data a sample of the quarter section, half section and all one section farm units were obtained in a preliminary survey. The purpose of that survey was to ascertain the main rotations used in the area, the type of land use, and farm organization as to labor, custom work and machine operations. The main rotations used were the two-year summerfallow-grain rotation, the three-year summerfallow-grain-grain rotation, farms incorporating sweet clover as a definite part of their cropping practices, and farms having some of the cultivated land seeded to perennial forages. From this information, farms were selected that could be considered independent farm units, that is, they had a full or very nearly so line of machinery, and did not do much custom work. From these farms the sample for the main survey was taken at random, but with some care that all parts of the area were represented for each rotation and size group of farm. Budgets were then set up for farms with 138, 276, and 552 acres under cultivation to represent quarter section, half section and one section farm units.

Description of Area.—The sample of farms used as a guide in developing the budgets for the loam soils was taken from seven municipal units in Southeastern Saskatchewan[1]. All the 145 sample farms are located on loam soils, i.e., Ryerson-Oxbow, or Naicam-Ryerson loam soils.[2] About half the grain farms surveyed were on Naicam-Ryerson loam soils north of the Pipestone Valley. The remainder of the grain farms and most of the forage farms were located south of the Pipestone Valley on Ryerson-Oxbow loam soils. Seven farms were on Oxbow loam soils.

The sample of farms, for the clay soils, was taken in the Tisdale-Arborfield area of Northeastern Saskatchewan. Soils in this area are very variable. The main types are Tisdale and Arborfield clays. There are also clay loam, silty clay loam, silty clay and heavy clay textured soils of these associations. There are also some soils of the Weirdale, Nipawin and Melfort associations, but these are found as small patches in the study area or on its fringe. One hundred and thirty-six farm records were taken on farms on Tisdale or Arborfield soils. Eleven were on Weirdale soils, three on Nipawin soils, two on Waitville soils, and one on Melfort soils. Fifty-eight, 69, 16 and 10 records were obtained in rural municipalities Nos. 427, 457, 487 and 428, respectively.

Rotation Evaluation

Enumerators collected information on farm organization, farm practices, land use, and farm inventories by size of farm and rotations followed. The rotational groups were summerfallow-grain, summerfallow-grain with forage, summerfallow-grain-grain, and summerfallow-grain-grain with forage for the Moosomin area; and summerfallow-grain, summerfallow-grain-grain, summerfallow-grain-grain with clover, and summerfallow-grain-grain with forage in the Tisdale-Arborfield area.

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[1] These included R.Ms. 61, 63, 91, 92, 93, 121 and 122.

[2] See description in Soil Report No. 12, University of Saskatchewan.

The "forage" farms visited during the field survey had a considerable acreage in forage crops. The general practice, on these farms, was to eventually bring this forage acreage back into grain production and seed other land to forage crops. This was not done according to a definite pattern. These farms had two separate rotations; (*a*) a short-run rotation of summerfallow and grains and, (*b*) a long-run rotation where certain fields are taken out of grain production and placed in forage crops for a few years.

To make a complete evaluation of the series of cropping systems mentioned, the following yield information was required:

a) yields of summerfallow wheat, summerfallow oats, summerfallow barley, stubble oats and stubble barley in the three-year grain rotation,

b) summerfallow crop yields in the two-year grain rotation in comparison with respective summerfallow crop yields in the three-year rotation,

c) does land seeded to forage and rebroken influence subsequent grain yields and, if so, in which direction, and by how much?

d) when grain is used as a nurse crop, how does its yield compare with normally seeded grains?

e) forage yields by kind and age of stand.

Because of other overshadowing yield influences, rust in 1954 and drought in 1955, little can be said on comparative yields for different rotational practices. In 1954, rust greatly decreased, both yield and grade, of all grain crops in the study area. Thus, better yields were obtained on fields where better rust-fighting conditions prevailed and rotations influenced yields very little. These conditions were rust-resistant varieties and cultural practices that hastened the maturing of the crop, such as early seeding. Wet soil conditions prevailed during the early spring in the 1955 study area. Cultural practices that would help in drying out the soil were used on many fields. Post-seeding conditions, however, were very dry and grains did not germinate as well as usual. During the summer, scattered showers were the only source of moisture and their effects depended on the date of their occurrence and the volume of precipitation. Because of these conditions it becomes difficult to ascertain the effects of rotational practices.

On the basis of yields data collected and other data supplied by the Supervisor of Statistics, Saskatchewan Department of Agriculture, the following yield estimates were made for the loam soil area, in terms of bushels per acre: summerfallow wheat 17, summerfallow oats 41, summerfallow barley 32, stubble oats 27, and stubble barley 21; and for the clay soil area; summerfallow wheat 24, summerfallow barley 32, stubble wheat 17, and stubble barley 27. Forage yields, for both areas, were estimated to be 1.5 tons per acre.

Yields on Loam Soils in the Moosomin Area.—Summerfallow wheat yields for the nine-year period, 1947 to 1955, at the Indian Head Experimental Farm were 44.2 bushels an acre with the summerfallow-wheat rotation and 42.4 bushels with the summerfallow-wheat-wheat rotation. The difference is not statistically significant.

Information from the field survey showed that in 1953 the average summerfallow wheat yield, from 43 fields, with the two-year rotation was 1.1 bushels an acre more than the average for 110 summerfallow wheat fields in the three-year rotation. The average yields were 28.2 and 27.1 bushels an acre, respectively. The same yield difference occurred in 1954, for 110 and 93 fields respectively, with yields of 11.5 and 10.4 bushels an acre.

Forage is probably gaining in importance in the Moosomin area. A large acreage is seeded to forage but as yet the forage program does not provide for a greater proportion of forage being left down for several years and then broken up and seeded to grains again. Much of the forage had only been seeded in the last few years and, consequently, the number of grain-producing fields that had previously been seeded to forage was not large enough to enable us to make reliable estimates of yield differences. There were 24 summerfallow wheat fields, both in 1953 and 1954, that had been seeded to forage within the previous 15 years. Fields in a two-year rotation with forage had subsequent grain yields much greater than yields on fields without forage. On three-year rotation fields with forage, the increase of subsequent grain yields was smaller. Since the number of such fields was very small and the variations in yields between fields were large, this difference could well have been due to chance.

Data from the Experimental Farms Service would substantiate the indication that forage will favorably affect the yield of subsequent grain crops. Average yields at the Indian Head Experimental Farm, for the 45-year period ending in 1956 were 26.6 and 14.6 bushels an acre for summerfallow and stubble wheat, respectively, in the three-year summerfallow-wheat-wheat rotation. The average yield in the nine-year rotation, summerfallow-wheat-oats; seeded down; hay-hay-hay; and breaking, corn-wheat-oats, was 36.6 bushels an acre for wheat after summerfallow and 29.6 bushels an acre for wheat after corn. Land in the latter rotation is probably better located than land in the other rotation and this, together with applications of barnyard manure, accounts for part of the differences in yield. These yields are an example of what can be produced at Indian Head when part of the farm is retired to grass for three of every nine years. The very moderate trend to the two-year rotation may be partly explained by trends in yields. There is evidence that stubble yields are declining[1], although there is limited long-time yield information available for the study areas as to the comparative yields of summerfallow and stubble crops. The results of the three-year rotation at Indian Head are summarized in Table 1.

Forage yields for 170 fields in 1953 and for 199 fields in 1954 were obtained during the study. In most cases these were estimates as farmers generally do not know the exact measurements or weight of stacks, loads, or bales.

Of the 143 established forage yields in 1953, as recorded in Table 2, 100 or 70 per cent were alfalfa with brome grass and/or crested wheat grass; in 1954 these mixtures were used on 67 per cent of the 177 established forage fields. Twenty-two and 20 per cent of the established forage fields in 1953 and 1954, respectively, had brome grass or crested wheat grass. The remainder of the fields, eight per cent in 1953 and 13 per cent in 1954, were in legumes, mainly alfalfa alone.

Very little information was available on forage yields for a longer time period. The average farm yield for recent years was about 1.5 tons per acre which may be somewhat higher than an expected long time average yield level.

Yields on Clay Soils.—Stubble oats, stubble barley, stubble wheat and summerfallow barley farm yields were compared with summerfallow wheat yields on the same farm and for the same year. Thus, where a farmer had both summerfallow wheat and another crop these other crop yields were compared with the corresponding summerfallow wheat yield.

These data can be used in comparing the two-year summerfallow-grain rotation with the three-year summerfallow-grain-grain rotation.

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[1] Hill, K. W., Wheat Yields and Soil Fertility on the Canadian Prairies after a Half Century of Farming, *Soil Science Society of America* Proceedings, Vol. 18, no. 2, April 1954. pp. 183-4.

Summerfallow wheat yields from Illustration Stations[1] data may be compared with local municipal yields. Since these municipal yields also include some stubble wheat yields and the Illustration Station data include only summerfallow wheat yields, the latter yields would obviously be higher. However, this does give a good local base for comparison. The 99 summerfallow wheat fields on Illustration Stations in the Park area of Saskatchewan, using grain only in the rotation, yielded 26 per cent higher than the corresponding municipal yields of all wheat. The 139 summerfallow wheat fields where forage was used in the rotation yielded 46 per cent more than the corresponding municipal yields of all wheat.

At four Illustration Stations, data were available for at least five years for a straight grain rotation and a rotation that included forage crops. These were the Star City, White Fox, Glenbush and Yorkton stations. The difference in yield for a long period was most marked at the White Fox station, where it was 12.8 bushels an acre. At this White Fox station, wheat in the rotation without summerfallow out-yielded summerfallow wheat in the straight grain rotation by 6.6 bushels an acre. Statistically, these yield differences are both highly significant. The higher summerfallow wheat yield at Yorkton in rotations fallow-wheat-hay-coarse grains and fallow-wheat-hay-wheat-coarse grains than in rotation fallow-wheat-wheat was also highly significant.

Table 1.—Summerfallow and Stubble Wheat Yields, Three-Year Rotation, Indian Head Experimental Farm, 1912-56

Period	Summerfallow wheat yield bu./ac.	Stubble wheat yield bu./ac.	Yield difference	Stubble yield as percentage of summerfallow yield
1912–21	28.7	16.8	11.9	58.5
1922–31	24.3	14.6	9.7	60.1
1932–41	22.2	12.6	9.6	56.8
1942–56	29.6	14.5	15.1	49.0
1912–56	26.6	14.6	12.0	54.9

Rotation Comparisons.—Two-year and three-year rotations can be compared by indicating the level of stubble wheat yield which would give the same net return to labor and management. The two rotations give the same net income on the loam soils when stubble yields are about 58 per cent of the summerfallow yields. The "break-even point" on the clay soils was at about the same level. Available data show that stubble wheat yields were lower in the Moosomin area and it is thus not surprising that the practice of seeding stubble to wheat has been almost discontinued.

Coarse grains are grown on stubble and the dollar returns from these grains are over 60 per cent of the returns from summerfallow wheat. On the clay soils of the Tisdale-Arborfield area, stubble wheat is still yielding over 60 per cent of summerfallow wheat yields. Hence, the trend to the two-year rotation on the clay soils does not seem to be justified from a yield and cost viewpoint.

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[1] Private farms whose owner-operators are co-operating with the Experimental Farms Service.

Table 2.—Average Yield of Forage Crops by Type and Age of Stand, 1953 and 1954

Age of stand	Legumes only (mainly alfalfa)		Alfalfa with brome and/or crested wheat grass		Brome or crested wheat grass	
	No. of fields	Tons/ac.	No. of fields	Tons/ac.	No. of fields	Tons/ac.
1953						
1st year stands	—	—	—	—	—	—
2nd year stands	4	2.4	15	1.5	4	1.2
3rd year stands	3	1.8	31	1.6	3	1.3
4 years and over	4	1.7	55	1.4	25	1.1
Average for 1953	11	2.0	101	1.5	32	1.2
1954						
1st year stands	—	—	—	—	—	—
2nd year stands	11	2.3	11	2.0	1	1.0
3rd year stands	7	1.8	22	1.4	6	1.0
4th year stands	3	1.1	31	1.4	4	1.5
5 years and over	3	0.9	54	1.5	24	1.1
Average for 1954	24	1.8	118	1.5	35	1.1

An evaluation of the three-year rotation with a forage cropping system can be made by obtaining the yield and price of forage at which the forage farms will provide the same net return to all labor and management as corresponding grain farms. On the loam soils, this value of forage would be $12.50 an acre for the 200-acre farm, $14.11 an acre for the 400-acre farm, and $13.06 an acre for the 600-acre farm. If the hay averages 1.5 tons an acre, the value of the hay would have to be $8.33, $9.41 and $8.71 a ton, respectively. With a yield of one ton an acre and an adjustment for lower haying costs, because of lower yields, the price per ton would have to be $12.00, $13.61 and $12.56 respectively.

On the clay soils, the "break-even" price for hay, when the yield was 1.5 tons an acre was $13.27 for the quarter section farms, $11.68 for the half section farm unit, and $12.33 for the one-section farm unit. Hay values would have to be $17.74, $17.02 and $18.00 respectively to be at the "break-even" point with hay yields of one ton an acre.

Table 3.—Comparison of Summerfallow Wheat Yields with Yields of Other Crops, 1953 and 1954

	Summerfallow wheat yield level in bushels				
	10-19	20-29	30-39	40-49	50-59
Stubble wheat:					
No. of observations			4	7	3
Per cent of summerfallow wheat yield			77	66	73
Yield difference (bu./ac.)			−8	−15	−15
Stubble oats:					
No. of observations	11	17	41	23	5
Per cent of summerfallow wheat yield	189	165	144	128	122
Yield difference (bu./ac.)	13	16	15	13	12
Stubble barley:					
No. of observations	15	37	71	37	5
Per cent of summerfallow wheat yield	165	111	100	88	82
Yield difference (bu./ac.)	10	3	—	−5	−9
Summerfallow barley:					
No. of observations	8	5	8	6	3
Per cent of summerfallow wheat yield	151	121	113	120	133
Yield difference (bu./ac.)	8	5	6	9	18

On the loam soils in the Moosomin area, grain yields from fields that have been in forage production in recent years showed a tendency towards higher yields than grain farms, where the land has been used only for grain production for a long time. If this is the case and a two-bushel an acre increase in yield is assumed, then the above two rotations will give the same returns to labor and management when hay yields $8.38 an acre on the 200-acre farm, $9.39 an acre on the 400-acre farm, and $7.56 an acre on the 600-acre farm. This would mean prices of $7.88, $8.89 and $7.06 a ton respectively, when hay yields of one ton an acre are assumed, with adjusted haying costs. With hay yields of 1.5 tons an acre, prices of $5.59, $6.26, and $5.04 a ton for the respective size groups is needed to ensure the farms growing some forage the same return to labor and management as the grain farms without forage.

"Forage" farms show a definite income advantage as grain yields on forage farms are influenced favorably. Results on income of an increase of two bushels an acre, because of the effects of forage, have already been described. If the increase in grain yield, because of the forage, is any more than this and haying costs are subtracted, the level is soon reached where the growing of forage will add to net income even if no value is placed on the forage crop itself.

If, on the clay soils in the Tisdale-Arborfield area, forage raises subsequent grain yields by one bushel an acre the income from forage crop farms would have to be $13.81 an acre to give the forage and the three-year rotational systems the same net returns to labor and management. If the increase in yields on all the grain fields (both summerfallow and stubble crops) is more than 3.7 bushels an acre, then the "forage" farms are more profitable even if no value is placed on the forage itself.

The three-year rotation, summerfallow-grain-grain, has a definite advantage over the two-year rotation, summerfallow-grain, on clay soils in the Tisdale-Arborfield area. On loam soils in the Moosomin area coarse grains can be economically grown on stubble.

If forage is grown on the clay soils and exerts no effect on subsequent grain yields, then the "forage" farms and the three-year rotation grain farms supply about the same net income to labor and management. If forage has a favorable effect on subsequent grain yields, it does not take much of an increase to include forage in the land use program for its grain-yield improving ability alone.

In the loam soil area, forage yields are higher by comparison with grain yields than in the clay soil area. Perennial grasses have a place in the cropping system of the area, on the basis of economic forage production, even without allowing for soil improvement.

Sweet clover was used only to a very limited extent on the loam soils of the Moosomin area but, on the other hand, 47 per cent of all the farmers on clay soil farms, in the preliminary survey, seeded sweet clover. Arranged by size of farm this included 25 per cent of the quarter section farm units, 52 per cent of the half section farm units and 68 per cent of the one section farm units.

Where sweet clover is used for soil improvement purposes only it can be added to the cultural practices with very little additional direct costs. The practice has been to seed it with a grain and then the sweet clover is tilled down the following spring, generally in June. The only extra direct cost then is the cost of the seed and perhaps one extra tilling of the summerfallow. This would be partially offset by spraying costs on farms where other crops are treated for weeds. Thus, with only a small difference in costs the decision of whether to use sweet clover or not depends on the effects of sweet clover on grain yields.

CHANGES IN AGRICULTURAL PRODUCTION IN THE PRAIRIE AND BRITISH COLUMBIA REGIONS OF CANADA, 1941-1956

C. Varkaris

This article is concerned with comparative changes in the volume of production of different farm products, changes in size, number, and area of farms and changes in farm population in the Prairie provinces and in British Columbia. In the period 1941 to 1956 the farm population in the Prairie provinces declined by about 22 per cent and in British Columbia increased by about ten per cent. The area in farms increased by about 6.5 million acres and 0.5 million acres for the Prairie provinces and British Columbia respectively.

Prairie Provinces.—Changes in the Prairie Provinces which include the provinces of Manitoba, Saskatchewan and Alberta, were fairly substantial.

The number of farms decreased by about 22 per cent from 296,469 in 1941 to 232,016 in 1956 but the average size of farm kept on increasing to reach 546 acres in 1956 or about 35 per cent more than the average of 405 acres reported in 1941. The over-all increase in the farm area amounted to 6,566,647 acres, which brings the total area in farms to 126,696,191 acres. Farm population, on the other hand, has been declining steadily and in 1956 it numbered 901,151 or 21.5 per cent less than in 1941 (Table 1).

Table 1.—Number and Size of Farms, Farm Area and Farm Population, Prairie Region, 1941-1956

	Unit	1941	1951	1956	Change	Per cent
Numbers of farms	No.	296,469	248,716	232,016	−64,453	−21.7
Average size	acres	405.2	498	546.1	− 140.9	+34.8
Area in farms	acres	120,129,544	123,853,220	126,696,191	+6,566,647	+ 5.5
Farm population	No.	1,148,240	963,928	901,151	−247,089	−21.5

Cash income from the sale of farm products totaled $1,247 million in 1956 compared with $1,376 million in 1951 and only $389 million in 1941. The main sources of cash income in 1956, in order of importance, were: wheat, cattle and calves, hogs, barley, dairy products, flaxseed, oats, poultry and eggs (Table 2).

Wheat was the most important single source of cash income. In 1956 wheat contributed $536 million and accounted for 43.0 per cent of total cash income. This compares with $108 million or 43.3 per cent of the total in 1941. Wheat acreage, in the same period, decreased by 483,046 acres or 2.3 per cent. Oats and barley followed a different trend. Barley acreage increased by 3,401,633 acres or 71.2 per cent, and its importance as a source of income rose by five per cent of the total. In 1956 barley accounted for 7.8 per cent of the total cash income compared with 2.8 per cent in 1941. Oats increased by 454,052 acres and its importance as a source of income rose by 0.8 per cent from 2.7 per cent of the total cash income to 3.4 per cent. Flaxseed acreage showed the largest percentage increase among crops, 202.7 per cent; the total acreage increased to 3,009,593 acres in 1956 from 994,188 in 1941. Its importance as a source of income rose by 3.4 per cent of the total.

Dairy cattle declined in numbers and as a source of income. The number of cows kept for milk dropped about 30 per cent from 1,107,594 in 1941 to 777,416 in 1956, and their share of the total cash income declined from 8.2 per cent in 1941 to 6.3 in 1956. On the other hand, beef cattle numbers

Table 2.—Cash Income from the Sale of Farm Products, Prairie Region, 1941-1956

	1941		1951		1956		Change in proportion of total cash income 1941-1956
	Value	Per cent	Value	Per cent	Value	Per cent	
	$'000		$'000		$'000		
Wheat[a]	168,303	43.3	712,636	51.8	536,543	43.0	− 0.3
Cattle and calves	44,195	11.3	229.876	16.7	177.959	14.3	+ 2.8
Hogs	75,825	19.5	109.261	7.9	106.170	8.5	−11.0
Barley	10,803	2.8	65,379	4.8	97.384	7.8	+ 5.0
Dairy products	31,808	8.2	69,343	5.0	78,393	6.3	− 1.9
Flaxseed	5,762	1.5	17.079	1.2	61.200	4.9	+ 3.4
Oats	10,441	2.7	49.209	3.6	43,885	3.5	+ 0.8
Poultry	7,775	2.0	29,462	2.1	38,093	3.1	+ 1.1
Eggs	9,301	2.4	24,176	1.8	32,847	2.6	+ 0.2
All others	24,746	6.3	69,131	5.0	74,671	6.0	− 0.3
Total	388,959	100.0	1,375,552	100.0	1,247,145	100.0	

[a]Includes Wheat Board Payments.
SOURCE: Dominion Bureau of Statistics. *Handbook of Agricultural Statistics.* Reference Paper 25, Farm Income 1926-1957.

increased by 102 per cent to reach 4,412,302 head in 1956 (Table 3). Their importance as a source of income increased by about three per cent and in 1956 accounted for 14.3 per cent of total cash income. Hog numbers declined by about 33 per cent and their share of total income dropped by 11 per cent.

A slight increase in poultry numbers occurred and their importance as a source of income rose by about one per cent for sales of poultry and 0.2 for sales of eggs.

Available data thus indicate a marked shift towards flaxseed, barley, and cattle and calves and away from hogs. For the other agricultural products the changes were not so pronounced.

British Columbia.—British Columbia is the only province in Canada to have had an increase in farm population since 1941. The farm population rose to 120,292 in 1951 from 102,446 in 1941 and then dropped to 112,668 in 1956. During the same period the number of farms declined by about six per cent from 26,394 in 1941 to 24,748 in 1956. The average size of farm, however, increased by 19.6 per cent to bring the average size to 183 acres per farm. The over-all increase in the farm area between 1941 and 1956 amounts to 505,311 acres, thus bringing the total acreage to 4,538,881 (Table 4).

The main farm products of British Columbia, according to the cash value of farm products sold in 1956, were: dairy products, cattle and calves, fruits and vegetables, poultry, eggs and hogs.

Table 3.—Changes in Livestock Numbers, Prairie Provinces, 1941-1956

	1941	1951	1956	Change	Per cent
Cows for milk	1,107,594	802,967	777,416	−330,178	− 29.8
Beef cows	2,181,018	2,706,084	4,412,302	+2,231,284	+102.3
Swine	3,152,646	1,801,930	2,113,833	−1,038,813	− 32.9
Sheep	1,251,121	532,120	620,639	−630,482	− 50.4
Poultry	23,432,251	23,392,639	23,652,472	+220,221	+ 0.9

SOURCE: *Census of Canada.*

Table 4.—Number and Size of Farms, Farm Area and Farm Population, British Columbia, 1941-1956

	Unit	1941	1951	1956	Change	Per cent
Number of farms	No.	26,394	26,406	24,748	1,646	− 6.2
Average size	acres	153	178	183	+ 30	+19.6
Area in farms	acres	4,033,570	4,702,274	4,538,881	+505,311	+12.5
Farm population	No.	102,446	120,292	112,668	+ 10,222	+ 9.9

Source: *Census of Canada, Agriculture.*

Total cash income from all sales of farm products rose to $116 million in 1956 from $105 million in 1951 and only $35 million in 1941 (Table 5). The cash income received from dairy products increased from $6,422,000 in 1941 to $29,463,000. Its importance as a source of income rose by 7.5 per cent from 17.9 to 25.4 per cent of the total. In the meantime the number of cows kept for milk dropped by 2.5 per cent from 92,489 in 1941 to 90,157 in 1956 (Table 6). On the other hand, the number of cattle and calves kept for beef increased by 42.8 per cent to 332,702 in 1956 from 232,967 in 1941. Cash income received from sales of cattle and calves made up 15.3 per cent of total income in 1956 and about 13 per cent in 1941.

Hog numbers declined by 38 per cent from 78,188 in 1941 to 48,472 in 1956; there was also a 3.3 per cent drop in their share of the over-all cash income.

Poultry numbers rose by 2.5 million or 55.6 per cent from 2,713,192 in 1941 to 4,221,305 in 1956. Cash income from sales of poultry in the same period rose from $1,159,000 to $15,535,000, and sales of eggs rose to $13,483,000 in 1956 from $3,802,000 in 1941.

Fruits and vegetables as a source of cash income declined in importance. In 1941 they accounted for 30.4 per cent compared with 14.9 per cent in 1946. This is the largest decline in importance of any product in British Columbia as well as in other provinces.

The analysis of changes in agricultural production in British Columbia, during 1941-1956 period, shows the greater importance given to poultry and dairy products and the smaller importance of fruits and vegetables. For other products the changes are not so well marked.

Table 5.—Cash Income from the Sale of Farm Products, British Columbia 1941-1956

	1941		1951		1956		Change in proportion of total cash income 1941-1956
	Value	Per cent	Value	Per cent	Value	Per cent	
	$'000		$'000		$'000		
Dairy products	6,422	17.9	22,624	21.6	29,463	25.4	+ 7.5
Cattle and calves	4,649	12.9	22,315	21.3	17,845	15.3	+ 2.4
Fruits and vegetables	10,896	30.4	20,163	19.3	17,280	14.9	−15.5
Poultry	1,159	3.2	8,311	8.0	15,535	13.4	+10.2
Eggs	3,802	10.6	10.363	9.9	13,483	11.6	+ 1.0
Hogs	2,000	5.6	3,359	3.2	2,648	2.3	− 3.3
All other products	6,971	19.4	17,451	16.7	19,935	17.2	− 2.2
Total value	35,899	100.0	104,586	100.0	116,189	100.0	

Source: Dominion Bureau of Statistics. *Handbook of Agricultural Statistics, Part II*, Reference Paper 25. *Farm Income* 1926-1957.

Table 6.—Changes in Livestock Numbers, British Columbia, 1941-1956

	1941	1951	1956	Change 1941 to 1956
		numbers		per cent
Cows for milk	92,489	82,924	90,157	− 2.5
Beef cows	232,967	238,334	332,702	+42.8
Swine	78,188	49,441	48,472	−38.0
Sheep	125,931	67,474	86,053	−31.7
Poultry	2,713,192	3,452,389	4,221,305	+55.6

Source: *Census of Canada, Agriculture.*

General Remarks.—The introduction of machines to replace horses and men as a source of power on the farms has spread rapidly in Western Canada since 1941. With fast and efficient machines, farmers can plant and harvest a much larger grain acreage in a shorter time. The uncertainty inherent in grain production forced the Prairie farmers to look for alternative enterprises such as livestock and poultry.

Competition from fruit and vegetable producers in the State of Washington, in the United States, and lower wages in fruit and vegetable processing plant in Eastern Canada were partly responsible for the relative decline of the fruit and vegetable industry of British Columbia. Moreover, the high price of farm land brought about by the demand for land for industrial purposes makes it difficult for the farmers to expand their operations and many of them are selling out. Some 14,000 acres have already been lost by farming to non-agricultural uses.

SOME FACTORS CONTRIBUTING TO THE SUCCESS OF FARM OPERATIONS ON THE GREY WOODED SOILS OF ALBERTA

R. J. McFarlane

The grey wooded soils area of Alberta includes about 15 million acres of potentially arable land[1]. It comprises a major portion of the remaining unsettled arable lands in Canada; any large-scale expansion of the farm land area of our country would then occur in this particular soil zone. Because of uncertainty regarding the agricultural potential of the grey wooded soils zone a preliminary study was undertaken to find some of the factors which have contributed to the progress of the most successful farm businesses in this soil zone.

The sample selected consisted of 28 successful farms. The selections were made in the fringe agricultural areas of municipalities and improvement districts 74, 75, 84, 86, 87, 93, 102, 103, 107 and 108.

The criteria used in selecting the farms were: (1) that the unit be considered one of the most successful in the area and (2) that the soil be of the grey wooded type. District Agriculturists, by the nature of their training and their familiarity with their respective areas, were the best source from which to obtain the names and locations of farm operators meeting the required qualifications. Eight of them were contacted and a list of 50 names and locations of some of the most successful farm operators was compiled.

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[1] *"Facts and Figures"*, Bureau of Statistics, Alberta 1954 p. 17.

Because of variations in soil types within the zonal classifications a careful check was made of the soil type on each of the selected farms. This check was made thanks to the co-operation of the Research Branch of the Canada Department of Agriculture. It led to the elimination of about 40 per cent of the 50 farms that had first been selected. These farms were eliminated because they were located on soils that were not of the grey wooded type.

The measurement of farm business success implies the consideration of many subjective valuations and the calculation of several kinds of costs and returns. In our study the farms were selected according to the individual District Agriculturists' concepts of success. In our analysis of the farm business data we used financial progress as our measure of success. Financial progress itself is indicated by the changes in net worth during the 1937-56 tenure period. This measure has limitations in that it does not provide a ready indication of the levels of living of the farm families and does not consider those subjective factors such as social and aesthetic value which exert a considerable influence on the individual's appraisal of welfare and success.

Financial Progress.—The average annual gain in net worth of the 28 farmers included in our study amounted to $1,308 per farmer over an average tenure period of 19.5 years (1937-56). The net worth, at the beginning of this period, averaged $5,730 per farmer; it increased by $25,514 to total $31,244 at the end of the period. This financial progress was conditioned by external forces such as changes in price levels and in cost-price relationships and by internal forces such as farm organization and management.

External Factors Contributing to Financial Success

Changes in Price Levels.—During the average tenure period (1937-56) covered in this study the prices of goods and services used by farmers increased by 135.9 per cent[1]. Part of this increase stemmed from improvements in quality and the functional characteristics of the products but it is also clear that a rather large part of the average gain in net worth was due to an increase in price levels. Moreover, as about half of the 28 farm operators began farming on a homestead basis it is evident that the observed gain in net worth also reflected the appreciation in the value of land after it was cleared and broken.

Cost-Price Relationships.—The relationship between the cost of goods and services used by farmers and the farm price of agricultural products was particularly favorable during the 1943-53 period[2]. The association between the rate of capital accumulation and favorable cost-price ratios is shown by the relationship between number of years of tenure and average annual gains in net worth (Table 1).

During the 1954-56 period, agricultural cost-price relationships were much less favorable than in the preceding 11-year period. The effect of this change on potential financial growth is illustrated in the 1956 income and expense summary (Table 2).

The foregoing indicates that the degree of success or the rate of financial progress exhibited by the farm operators depended to a rather large extent on factors over which they had no control. However, since farm operations

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[1] *Price Index Numbers of Goods and Services Used by Farmers, Western Canada, Prices and Price Indexes,* Dominion Bureau of Statistics.

[2] *Ratio of Price Index Numbers of Goods and Services Used by Farmers, Western Canada,* and *Index Numbers of Farm Prices of Agricultural Products, Alberta, Price and Price Indexes,* Dominion Bureau of Statistics.

Table 1.—Average Gain in Net Worth by Years of Tenure, 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

Years of tenure	Number of farms	Average annual gain in net worth
0– 5	0	—
6–10	6	2,025
11–15	5	2,255
16–20	5	1,300
21–25	4	1,013
26–30	6	1,163
31 and over	2	688
Average, 19.5	28	1,308

were subject to similar external forces we may assume that internal operations on the most successful farms were of such a nature as to lead towards full realization of opportunities afforded by favorable conditions.

Internal Factors Contributing to Financial Success

Farm Size.—In 1956, on the average, the farms had about 272 acres of improved land. By comparison, the average was 165 for all farms located within the municipal divisions and 176 for those in the census divisions from which the survey farms were selected (Table 3).

The influence of size on capital accumulation, as revealed gains in net worth, is clearly illustrated in Table 4-7.

Land Use.—In 1956 the average cropping program of the survey farms differed significantly from those of the municipal and the census division farms. The main differences, as seen in Table 8, were: (1) the average survey farm used 40 per cent of its improved acreage for the production of grasses, legumes and other fodder whereas the average municipal and census division farms used 19 and 18 per cent respectively, (2) the average survey farm prepared 40 per cent less summerfallow than the typical farms of the municipalities and census divisions.

Crop Yields (1947-56).—The ten-year average yields of wheat, oats and barley on the farms studied were 29.5, 50.1 and 33.3 bushels per acre respectively.

Table 2.—Average Income and Expense, 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

	Dollars
Crops sold or available for sale	2,402
Livestock sales	2,968
Livestock product sales	633
Custom work performed	60
Miscellaneous current cash receipts	2
Total cash receipts	**6,065**
Value of increase in physical inventory of livestock	122
Total farm operations—Receipts	**6,187**
Total farm operations—Expenses	**3,783**
Return to capital and family labor	2,404
Value of unpaid family labor	574
Return to capital and operator's labor	1,830
Operator's labor allowance [a]	1,800
Return to capital	30

[a] Estimated cash cost of family living.

Table 3.—Farm Acreages by Specified Areas Compared with 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

—	Number of farms	Average acres per farm		
		Total	Improved	Unimproved
Study group	28	559	272	287
Municipal divisions [a]	12,781	326	165	161
Census divisions [b]	22,334	322	176	146

[a] Includes municipalities 74, 75, 84, 86, 87, 93, 102, 103, 107 and 108.
[b] Includes census divisions 11–13.
SOURCES: *Census of Canada, 1956.*

These yields were 8, 12.9 and 7.7 bushels per acre greater than the average for the crop districts in which these farms were located (Table 9).

The factors which contributed to the higher grain yields of the survey farms cannot be fully assessed. However, apart from the possibility that farm operators overestimated their average yields, the following may have been contributing factors:

(1) The effect of hay crops on subsequent grain yields.

If the ratio of hay to other crops, in the average 1956 cropping programs for the farms studied and for those in their respective crop districts may be considered as being about the same as the ratio for the ten-year period, 1947-56, then the higher grain yields on the survey farms (Table 9) may be attributed, at least in part to the higher proportion of cropland in hay on the survey than on the other farms (Table 8).

(2) In 1956, the 28 farmers included in the study applied commercial fertilizer to about 25 per cent of the total improved acreage of their farms.

Table 4.—Average Annual Gain in Net Worth (1937–56) in Relation to Improved Acreage, 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

Improved acres (August 1956)	Number of farms	Average annual gain in net worth
		$
Under 200	8	717
200–299	11	1,358
300 and over	9	1,702
Average, 272	28	1,308

Table 5.—Average Annual Gain in Net Worth (1937–56) in Relation to Capital Investment, 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

Capital investment (August 1956)	Number of farms	Average annual gain in net worth
$		$
Under 15,000	3	440
15,000–24,999	12	1,038
25,000–34,999	7	1,441
35,000 and over	6	2,180
Average, 27,269	28	1,308

Table 6.—Net Worth in 1956 in Relation to Beginning Net Worth, 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

Beginning net worth	Number of farms	Net worth, 1956
$		$
Under 2,000	13	24,829
2,000–4,999	7	36,681
5,000 and over	8	36,912
Average, 5,730	28	31,244

We do not know how much fertilizer was used in each of the crop districts. However, we may feel well justified to assume that these farms lagged behind the survey farms in their use of fertilizers.

Income Potential from Legume and Grass Seeds.—The large acreage in hay on the 28 farms studied may have placed the operators of these farms in a most favorable situation concerning their ability to secure income from sales of legume and/or grass seeds. During the late 1940's and the early 1950's

Table 7.—Farm Income and Return to Capital in Relation to Capital Investment, 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

Capital investment	No. of farms	Farm income	Operator's labor earnings [a]	Return to capital
$		$	$	$
Under 15,000	3	1,049	1,800	−751
15,000–24,999	12	1,507	1,800	−293
25,000–34,999	7	2,865	1,800	1,065
35,000 and over	6	2,711	1,800	911
Average, 27,269	28	1,830	1,800	30

[a] Estimated cash cost of family living.

Table 8.—Distribution of Cropland Acres by Specified Areas Compared with 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

Crop	Survey farms	Munici-palities [a]	Census division [b]	Survey farms	Munici-palities [a]	Census division [b]
		– acres –			– per cent –	
Wheat	23	18	17	8	11	10
Oats	54	30	33	20	19	19
Barley	46	39	47	17	24	27
Other grains	4	4	4	1	2	2
Tame hay	58	17	16	21	10	9
Other fodder	15	4	4	6	2	2
Pasture	34	12	12	13	7	7
Other field crops	3	7	7	1	4	4
Summerfallow	35	34	36	13	21	20
Total	**272**	**165**	**176**	**100**	**100**	**100**
Number of farms	28	12,781	22,334			

[a] Includes Municipalities 74, 75, 84, 86, 87, 93, 102, 103, 107 and 108.
[b] Includes Census Divisions 11–13.
SOURCE: *Census of Canada Agriculture, 1956.*

Table 9.—Comparison of Average Grain Yields by Specified Crop Districts with 28 Successful Farms, Grey Wooded Soils, Alberta, 1947-56

Crop district	Wheat		Oats		Barley	
	Crop district	Survey farms	Crop district	Survey farms	Crop district	Survey farms
	—bushels per acre—					
11	23.4	34.3	39.4	53.3	26.5	33.5
12	20.3	30.0	35.6	35.0	24.8	30.0
13	19.8	28.9	35.0	47.5	24.8	37.0
14	22.6	20.0	38.8	50.0	26.1	25.8
Average	21.5	29.5	37.2	50.1	25.6	33.3

SOURCE: Crop District data, Alberta Department of Agriculture, *Crop Reports.*

the farm prices of legume and grass seeds were unusually high. One would, of course, expect to see the potential income from their sales closely related to the acreage in the two crop seeds.

Livestock.—In 1956, the average livestock inventory consisted of 57.7 productive animal units per farm studied. This inventory represented about 23 per cent of the total capital invested in the average farm business. The importance of a relatively high investment in livestock as a means of securing gains in net worth is well demonstrated in Table 11.

Labor Efficiency.—As measured by productive man work units per man equivalent the average accomplishment per man was 304 work units, the range being from 124 to 560. Net work changes in relation to P.M.W.U.'s per M.E.

Table 10.—Average Grain Yield by Cropping Practices, 28 Successful Farms, Grey Wooded Soils, Alberta, 1947-56

Crop	Crop after		
	Stubble	Fallow	Hay
	—bushels per acre—		
Wheat	26	30	35
Oats	42	56	69
Barley	29	39	49

Table 11.—Average Annual Gain in Net Worth in Relation to Capital Invested in Livestock, 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

Proportion of total capital invested in livestock	Number of farms	Livestock investment	Annual gain in net worth
—per cent—		$	$
Under 5	7	1,892	856
15–24	11	4,456	1,282
25 and over	10	12,366	1,692
Average, 23	28	6,237	1,308

Table 12.—Average Annual Gain in Net Worth (1937-56) and Capital Investment in Relation to Labor Efficiency [a], 28 Successful Farms, Grey Wooded Soils, Alberta, 1956

P.M.W.U. per man	Number of farms	Capital investment	Annual gain in net worth
		$	$
Under 200	7	17,950	753
200–299	6	28,393	1,417
300–399	9	31,483	1,635
400 and over	6	30,697	1,349
Average, 304	28	27,269	1,308

[a] Work Units Per Man.

(Table 12) indicate that gains in net worth may reflect labor efficiency. However, as P.M.W.U.'s measure productive labor requirements, they also reflect capital investment. Therefore, the lower the capital investment the lower the labor requirements and hence a low labor efficiency rating.

Conclusion.—This study of the most successful farms located on grey wooded soils emphasizes the key role of management. Soil management techniques, at various levels of fertility, require differing levels of managerial ability and it is this ability, as indicated by crop yields, that characterizes the superior manager.

Management plays a dominant role but, for the greatest possible financial success, it must be allied to other factors. For example, our analysis revealed that the operators with the largest size of business or net worth at the beginning of the study period were able to secure larger gains in net worth.

The rate of success achieved, measured in terms of gains in net worth also reflects the changes in price levels and cost-price relationships. For example, it is quite evident that the average annual rate of gain of $1,308 in net worth was not the result of superior management alone. In years of unfavorable cost-price relationships, on the other hand, financial progress was greatly curtailed, regardless of management ability.

PUBLICATION OF THE UNITED NATIONS

Methods of Farm Managment Investigations for Improving Farm Productivity. FAO Agricultural Development Paper No. 64. Yang, W. Y., Land and Water Use Branch, Agriculture Division, FAO Rome, Italy. 1958. pp. ix + 228 (Price, $2.00).

A sequel to the FAO Development Paper No. 20 titled *Farm Management Investigations for Agricultural Improvement.* This paper was prepared especially for extension workers, agriculture teachers and officials, rural leaders, officers of farmers' organizations and others concerned with greater farm efficiency and productivity.

The author expresses the hope that his paper will "be of value in furthering agricultural development". His hope should be realized, if only because of the simple, interesting, creative style in which he has written his well-arranged and compact material. Because of his many years of experience in farm management and development work in under-developed countries he directs his efforts towards the teaching of research methods to workers in those countries. However, his book should be of immense value to all people concerned with research and development work in farm management.

Yang begins his paper with sections on the conventional methods of conducting farm business surveys and doing farm bookkeeping and financial accounting work. He follows with a section on farm business analyses, describing the methods used to determine the financial position of individual farmers and discover the specific relationships between management factors and the rate of success of a farm business.

From these methods which serve mostly to supply indicators of relative success or failure he proceeds to a review of methods better designed for a comprehensive planning and budgeting of the farm business; these methods are discussed under the following headings: *Cost and Enterprise Studies; Marginal Analysis of Input-Output Relationship; and Farm Planning, Budgeting and Programming.*

Cost and enterprise studies may be undertaken to:

a) determine the unit cost of a product as a basis for the formulation of governmental policies such as price fixing, trade control, subsidization and tariff determination.

b) determine the relative profitability of various farm enterprises and thus help farmers in their choice and combination of enterprises.

c) discover the causes of variations in unit cost of production of individual enterprise and help farmers reduce their costs and increase their incomes.

d) establish efficiency or management standards for various sizes and types of farms.

e) find the best practices and techniques of farm operation.

f) determine the optimum input requirements of each farm enterprise.

g) establish production functions under practical farm conditions.

The main purpose of input-output analyses is to discover how changes in rates of application of input factors affect yields or output and find out which is the most desirable practice, with varying price and cost conditions, for the maximization of farm net returns.

Farm planning and farm budgeting are research methods used for the analysis of "the probable effects on costs and returns of the various alternative systems of enterprise combination or resource use". More specifically, they are used to determine the types of adjustment needed in the organization and operation of individual farms, so as to improve their productivity and profitability and supply a basis for the study of the impact of changes on the economy of a region; they may then serve as a useful guide in regional economic planning.

Agricultural credit should not be solely a lending-borrowing operation but a means to encourage efficiency in production and promote rural security and welfare. The only sound way to determine the proper type and amount of credit to be made available to a farmer is to work out with this farmer a plan or budget that will indicate the best way to maximize his net returns.

Farm planning and budgeting is also of great value—one would even say that it is essential—in the formulation and appraisal of development projects. It will then help determine the prospective needs of farmers and the best alternative for the reorganization of farm units; it will also help in the appraisal of farmers' requirements other than those supplied directly by the project and provide basic data for the estimation of the cost-benefit ratio of the project.

For the mathematically-inclined linear programming serves as a systematic method for the determination of the best plan to ensure the proper choice and combination of enterprises and maximize the income to be secured from available resources.

Yang ends his paper with sections on farm work efficiency studies, the estimation of machinery costs and the planning of the efficient use of machinery, cost-benefit appraisal of agricultural and farm projects, and land tenure problems.

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Vol.28-29(1958-59)

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